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## SEQUENCE LISTING

21402-138 Erman, John L  
Rastelli, Luca  
Shimkets, Richard A

<120> Novel Proteins and Nucleic Acids Encoding Same and  
Antibodies Directed Against these Proteins

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Val Ser Glu Met Asp Tyr Glu Ser Met Pro Ser Phe Gln Phe Cys Val  
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Met Glu Leu Leu Met Val Arg Ala Ser Asp Glu Asp Ser Glu Val Asn  
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Val Thr Gly Ser Ile Ser Val Leu Asn Pro Ala Phe Leu Gly Leu Ser  
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Arg Lys Leu Thr Ile Arg Ala Ser Asp Gly Leu Tyr Gln Asp Thr Ala  
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Leu Val Lys Ile Ser Leu Thr Gln Val Leu Asp Lys Ser Leu Gln Phe  
                     1955                      1960                      1965

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Lys Ala Leu Val Ile Leu Gly Ala Gln Gly Asn His Leu Asn Asp Thr  
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Leu Ser Tyr Phe Leu Leu Asn Gly Thr Asp Met Phe His Met Val Gln  
                     2005                      2010                      2015

Ser Ala Gly Val Leu Gln Thr Arg Gly Val Ala Phe Asp Arg Glu Gln  
                     2020                      2025                      2030

Gln Asp Thr His Glu Leu Ala Val Glu Val Arg Asp Asn Arg Thr Pro  
                     2035                      2040                      2045

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Glu Asp Leu Gly Thr Asn Gly Ala Val Thr Tyr Glu Phe Ala Glu Asp  
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 Lys Val Arg Val Pro Glu Asn Ile Thr Leu Tyr Thr Pro Ile Leu His  
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Thr Glu Leu Gln Pro Gly Leu Phe His His Leu Arg Phe Leu Glu Glu
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Leu Arg Leu Ser Gly Asn His Leu Ser His Ile Pro Gly Gln Ala Phe
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Ser Gly Leu Tyr Ser Leu Lys Ile Leu Met Leu Gln Asn Asn Gln Leu
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Gly Gly Ile Pro Ala Glu Ala Leu Trp Glu Leu Pro Ser Leu Gln Ser
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Leu Arg Leu Asp Ala Asn Leu Ile Ser Leu Val Pro Glu Arg Ser Phe
      100            105            110

Glu Gly Leu Ser Ser Leu Arg His Leu Trp Leu Asp Asp Asn Ala Leu
      115            120            125

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Gln Asn Leu Thr Ser Leu Val Val Leu His Leu His Asn Asn Arg Ile  
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Gln His Leu Gly Thr His Ser Phe Glu Gly Leu His Asn Leu Glu Thr  
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Leu Asp Leu Asn Tyr Asn Lys Leu Gln Glu Phe Pro Val Ala Ile Arg  
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Thr Leu Gly Arg Leu Gln Glu Leu Gly Phe His Asn Asn Asn Ile Lys  
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Ala Ile Pro Glu Lys Ala Phe Met Gly Asn Pro Leu Leu Gln Thr Ile  
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His Phe Tyr Asp Asn Pro Ile Gln Phe Val Gly Arg Ser Ala Phe Gln  
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Tyr Leu Pro Lys Leu His Thr Leu Ser Leu Asn Gly Ala Met Asp Ile  
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Gln Glu Phe Pro Asp Leu Lys Gly Thr Thr Ser Leu Glu Ile Leu Thr  
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Leu Thr Arg Ala Gly Ile Arg Leu Leu Pro Ser Gly Met Cys Gln Gln  
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Leu Pro Ser Leu His Arg Cys Gln Lys Leu Glu Glu Ile Gly Leu Gln  
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Pro Glu Ala Phe Ser Thr Leu His Ser Leu Val Lys Leu Asp Leu Thr  
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Asp Asn Gln Leu Thr Thr Leu Pro Leu Ala Gly Leu Gly Gly Leu Met  
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Leu Thr Met Leu His Thr Asn Asp Phe Ser Gly Leu Thr Asn Ala Ile
    35             40             45

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Ser Ile His Leu Gly Phe Asn Asn Ile Ala Asp Ile Glu Ile Gly Ala
    50             55             60

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Phe Asn Gly Leu Gly Leu Leu Lys Gln Leu His Ile Asn His Asn Ser
    65             70             75             80

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Leu Glu Ile Leu Lys Glu Asp Thr Phe His Gly Leu Glu Asn Leu Glu
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Phe Leu Gln Ala Asp Asn Asn Phe Ile Thr Val Ile Glu Pro Ser Ala
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Arg Glu Leu Gln Gln Leu Gly Ile Thr Glu Tyr Leu Arg Lys Asn Ile  
725 730 735

Ala Gln Leu Gln Pro Asp Met Glu Ala His Tyr Pro Gly Ala His Glu  
740 745 750

Glu Leu Lys Leu Met Glu Thr Leu Met Tyr Ser Arg Pro Arg Lys Val  
755 760 765

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Ser	Phe	Ser	Gly	Gly	Gln	Pro	Ser	Ser	Thr	Asp	Ala	Pro	Lys	Ala	Trp
			20				25						30		
Asn	Tyr	Glu	Leu	Pro	Ala	Thr	Asn	Tyr	Glu	Thr	Gln	Asp	Ser	His	Lys
		35					40					45			
Ala	Gly	Pro	Ile	Gly	Ile	Leu	Phe	Glu	Leu	Val	His	Ile	Phe	Leu	Tyr
	50					55					60				
Val	Val	Gln	Pro	Arg	Asp	Phe	Pro	Glu	Asp	Thr	Leu	Arg	Lys	Phe	Leu
	65				70					75					80
Gln	Lys	Ala	Tyr	Glu	Ser	Lys	Ile	Asp	Tyr	Asp	Lys	Pro	Glu	Thr	Val
			85						90					95	
Ile	Leu	Gly	Leu	Lys	Ile	Val	Tyr	Tyr	Glu	Ala	Gly	Ile	Ile	Leu	Cys
		100						105					110		
Cys	Val	Leu	Gly	Leu	Leu	Phe	Ile	Ile	Leu	Met	Pro	Leu	Val	Gly	Tyr
		115					120					125			
Phe	Phe	Cys	Met	Cys	Arg	Cys	Cys	Asn	Lys	Cys	Gly	Gly	Glu	Met	His
	130					135					140				
Gln	Arg	Gln	Lys	Glu	Asn	Gly	Pro	Phe	Leu	Arg	Lys	Cys	Phe	Ala	Ile
	145				150					155					160
Ser	Leu	Leu	Val	Ile	Cys	Ile	Ile	Ile	Ser	Ile	Gly	Ile	Phe	Tyr	Gly
			165						170					175	
Phe	Val	Ala	Asn	His	Gln	Val	Arg	Thr	Arg	Ile	Lys	Arg	Ser	Arg	Lys
		180						185					190		
Leu	Ala	Asp	Ser	Asn	Phe	Lys	Asp	Leu	Arg	Thr	Leu	Leu	Asn	Glu	Thr
		195					200					205			
Pro	Glu	Gln	Ile	Lys	Tyr	Ile	Leu	Ala	Gln	Tyr	Asn	Thr	Thr	Lys	Asp
	210					215					220				

Lys Ala Phe Thr Asp Leu Asn Ser Ile Asn Ser Val Leu Gly Gly Gly  
 225 230 235 240  
 Ile Leu Asp Arg Leu Arg Pro Asn Ile Ile Pro Val Leu Asp Glu Ile  
 245 250 255  
 Lys Ser Met Ala Thr Ala Ile Lys Glu Thr Lys Glu Ala Leu Glu Asn  
 260 265 270  
 Met Asn Ser Thr Leu Lys Ser Leu His Gln Gln Ser Thr Gln Leu Ser  
 275 280 285  
 Ser Ser Leu Thr Ser Val Lys Thr Ser Leu Arg Ser Ser Leu Asn Asp  
 290 295 300  
 Pro Leu Cys Leu Val His Pro Ser Ser Glu Thr Cys Asn Ser Ile Arg  
 305 310 315 320  
 Leu Ser Leu Ser Gln Leu Asn Ser Asn Pro Glu Leu Arg Gln Leu Pro  
 325 330 335  
 Pro Val Asp Ala Glu Leu Asp Asn Val Asn Asn Val Leu Arg Thr Asp  
 340 345 350  
 Leu Asp Gly Leu Val Gln Gln Gly Tyr Gln Ser Leu Asn Asp Ile Pro  
 355 360 365  
 Asp Arg Val Gln Arg Gln Thr Thr Thr Val Val Ala Gly Ile Lys Arg  
 370 375 380  
 Val Leu Asn Ser Ile Gly Ser Asp Ile Asp Asn Val Thr Gln Arg Leu  
 385 390 395 400  
 Pro Ile Gln Asp Ile Leu Ser Ala Phe Ser Val Tyr Val Asn Asn Thr  
 405 410 415  
 Glu Ser Tyr Ile His Arg Asn Leu Pro Thr Leu Glu Glu Tyr Asp Ser  
 420 425 430  
 Tyr Trp Trp Leu Gly Gly Leu Val Ile Cys Ser Leu Leu Thr Leu Ile  
 435 440 445  
 Val Ile Phe Tyr Tyr Leu Gly Leu Leu Cys Gly Val Cys Gly Tyr Asp  
 450 455 460  
 Arg His Ala Thr Pro Thr Thr Arg Gly Cys Val Ser Asn Thr Gly Gly  
 465 470 475 480  
 Val Phe Leu Met Val Gly Val Gly Leu Ser Phe Leu Phe Cys Trp Ile  
 485 490 495  
 Leu Met Ile Ile Val Val Leu Thr Phe Val Phe Gly Ala Asn Val Glu  
 500 505 510  
 Lys Leu Ile Cys Glu Pro Tyr Thr Ser Lys Glu Leu Phe Arg Val Leu  
 515 520 525

Asp Thr Pro Tyr Leu Leu Asn Glu Asp Trp Glu Tyr Tyr Leu Ser Gly  
 530 535 540  
 Lys Leu Phe Asn Lys Ser Lys Met Lys Leu Thr Phe Glu Gln Val Tyr  
 545 550 555 560  
 Ser Asp Cys Lys Lys Asn Arg Gly Thr Tyr Gly Thr Leu His Leu Gln  
 565 570 575  
 Asn Ser Phe Asn Ile Ser Glu His Leu Asn Ile Asn Glu His Thr Gly  
 580 585 590  
 Ser Ile Ser Ser Glu Leu Glu Ser Leu Lys Val Asn Leu Asn Ile Phe  
 595 600 605  
 Leu Leu Gly Ala Ala Gly Arg Lys Asn Leu Gln Asp Phe Ala Ala Cys  
 610 615 620  
 Gly Ile Asp Arg Met Asn Tyr Asp Ser Tyr Leu Ala Gln Thr Gly Lys  
 625 630 635 640  
 Ser Pro Ala Gly Val Asn Leu Leu Ser Phe Ala Tyr Asp Leu Glu Ala  
 645 650 655  
 Lys Ala Asn Ser Leu Pro Pro Gly Asn Leu Arg Asn Ser Leu Lys Arg  
 660 665 670  
 Asp Ala Gln Thr Ile Lys Thr Ile His Gln Gln Arg Val Leu Pro Ile  
 675 680 685  
 Glu Gln Ser Leu Ser Thr Leu Tyr Gln Ser Val Lys Ile Leu Gln Arg  
 690 695 700  
 Thr Gly Asn Gly Leu Leu Glu Arg Val Thr Arg Ile Leu Ala Ser Leu  
 705 710 715 720  
 Asp Phe Ala Gln Asn Phe Ile Thr Asn Asn Thr Ser Ser Val Ile Ile  
 725 730 735  
 Glu Glu Thr Lys Lys Tyr Gly Arg Thr Ile Ile Gly Tyr Phe Glu His  
 740 745 750  
 Tyr Leu Gln Trp Ile Glu Phe Ser Ile Ser Glu Lys Val Ala Ser Cys  
 755 760 765  
 Lys Pro Val Ala Thr Ala Leu Asp Thr Ala Val Asp Val Phe Leu Cys  
 770 775 780  
 Ser Tyr Ile Ile Asp Pro Leu Asn Leu Phe Trp Phe Gly Ile Gly Lys  
 785 790 795 800  
 Ala Thr Val Phe Leu Leu Pro Ala Leu Ile Phe Ala Val Lys Leu Ala  
 805 810 815  
 Lys Tyr Tyr Arg Arg Met Asp Ser Glu Asp Val Tyr Asp Asp Val Glu  
 820 825 830

Thr Ile Pro Met Lys Asn Met Glu Asn Gly Asn Asn Gly Tyr His Lys  
835 840 845

Asp His Val Tyr Gly Ile His Asn Pro Val Met Thr Ser Pro Ser Gln  
850 855 860

His  
865

<210> 11  
<211> 1807  
<212> DNA  
<213> Homo sapiens

<400> 11  
gcacgagggg agaggggtgat cgcacccggg gaaggtcgct gggcagggcg agttgggaaa 60  
gcggcagccc ccgccgcccc cgcagcccct tctcctcctt tctcccacgt cctatctgcc 120  
tctcgctgga ggccaggccg tgcagcatcg aagacaggag gaactggagc ctcataggcc 180  
ggccccgggg gccggcctcg ggcttaaata ggagctccgg gctctggctg ggacccgacc 240  
gctgccggcc gcgtccccgc tgcctctgcc gggatgatgga aaaccccagc ccggccgccc 300  
ccctgggcaa ggccctctgc gctctcctcc tggccactct cggcgccgcc ggccagcctc 360  
ttgggggaga gtccatctgt tccgccagag ccccggccaa atacagcatc accttcacgg 420  
gcaagtggag ccagacggcc ttccccaagc agtaccacct gttccgcccc cctgcgcagt 480  
ggtcttcgct gctggggggc gcgcatagct ccgactacag catgtggagg aagaaccagt 540  
acgtcagtaa cgggctgctc gactttgcgg agcgcggcga ggctggggcg ctgatgaagg 600  
agatcgaggc ggccgggggag gcgctgcaga gcgtgcacgc ggtgttttcg gcgcccgcgc 660  
tccccagcgg caccgggcag acgtcggcgg agctggagggt gcagcgcagg cactcgctgg 720  
tctcgtttgt ggtgcgcata gtgccagacc ccgactgggt cgtgggcgtg gacagcctgg 780  
acctgtgcga cggggaccgt tggcgggaaac aggcggcgct ggacctgtac ccctacgacg 840  
ccgggacgga cagcggcttc accttctcct cccccaactt cgccaccatc ccgcaggaca 900  
cggtgaccga gataacgtcc tctctccca gccaccggc caactccttc tactaccgc 960  
ggctgaaggc cctgcctccc atcgccaggg tgacactggt gcggctgcga cagagcccca 1020  
gggccttcat cctccccgcc ccagtcctgc ccagcaggga caatgagatt gtagacagcg 1080  
cctcagttcc agaaacgccg ctggactgcg aggtctccct gtggtcgtcc tggggactgt 1140  
gcggaggcca ctgtgggagg ctccgggacca agagcaggac tcgctacgtc cgggtccagc 1200  
ccgccaacaa cgggagcccc tgccccgagc tcgaagaaga ggctgagtgc gtccctgata 1260  
actgcgtcta agaccagagc cccgcagccc ctggggcccc cggagccatg ggggtgctggg 1320  
ggctcctgtg caggctcatg ctgcaggcgg ccgaggcaca ggggggttcg cgctgctcct 1380  
gaccgcgggtg aggcgcgcc gaccatctct gactgaagg gccctctggt ggccggcacg 1440  
ggcattggga aacagcctcc tcttttccca accttgcttc ttagggggccc ccgtgtccc 1500  
tctgctctca gcctcctcct cctgcaggat aaagtcaccc ccaaggctcc agctactcta 1560  
aattatggtc tcttataaag ttattgctgc tccaggagat tgccttcat cgtccagggg 1620  
cctggctccc acgtggttgc agatacctca gacctggtgc tctaggctgt gctgagccca 1680  
ctctcccag ggccatcca agcggggggc acttgagaag tgaataaatg gggcggtttc 1740  
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tgctcac 1807

<210> 12  
<211> 331  
<212> PRT  
<213> Homo sapiens

<400> 12  
Met Glu Asn Pro Ser Pro Ala Ala Ala Leu Gly Lys Ala Leu Cys Ala

1	5	10	15
Leu Leu Leu Ala Thr Leu Gly Ala Ala Gly Gln Pro Leu Gly Gly Glu	20	25	30
Ser Ile Cys Ser Ala Arg Ala Pro Ala Lys Tyr Ser Ile Thr Phe Thr	35	40	45
Gly Lys Trp Ser Gln Thr Ala Phe Pro Lys Gln Tyr Pro Leu Phe Arg	50	55	60
Pro Pro Ala Gln Trp Ser Ser Leu Leu Gly Ala Ala His Ser Ser Asp	65	70	75
Tyr Ser Met Trp Arg Lys Asn Gln Tyr Val Ser Asn Gly Leu Arg Asp	85	90	95
Phe Ala Glu Arg Gly Glu Ala Trp Ala Leu Met Lys Glu Ile Glu Ala	100	105	110
Ala Gly Glu Ala Leu Gln Ser Val His Ala Val Phe Ser Ala Pro Ala	115	120	125
Val Pro Ser Gly Thr Gly Gln Thr Ser Ala Glu Leu Glu Val Gln Arg	130	135	140
Arg His Ser Leu Val Ser Phe Val Val Arg Ile Val Pro Ser Pro Asp	145	150	155
Trp Phe Val Gly Val Asp Ser Leu Asp Leu Cys Asp Gly Asp Arg Trp	165	170	175
Arg Glu Gln Ala Ala Leu Asp Leu Tyr Pro Tyr Asp Ala Gly Thr Asp	180	185	190
Ser Gly Phe Thr Phe Ser Ser Pro Asn Phe Ala Thr Ile Pro Gln Asp	195	200	205
Thr Val Thr Glu Ile Thr Ser Ser Ser Pro Ser His Pro Ala Asn Ser	210	215	220
Phe Tyr Tyr Pro Arg Leu Lys Ala Leu Pro Pro Ile Ala Arg Val Thr	225	230	235
Leu Val Arg Leu Arg Gln Ser Pro Arg Ala Phe Ile Pro Pro Ala Pro	245	250	255
Val Leu Pro Ser Arg Asp Asn Glu Ile Val Asp Ser Ala Ser Val Pro	260	265	270
Glu Thr Pro Leu Asp Cys Glu Val Ser Leu Trp Ser Ser Trp Gly Leu	275	280	285
Cys Gly Gly His Cys Gly Arg Leu Gly Thr Lys Ser Arg Thr Arg Tyr	290	295	300
Val Arg Val Gln Pro Ala Asn Asn Gly Ser Pro Cys Pro Glu Leu Glu			

305                      310                      315                      320

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<210> 13
<211> 898
<212> PRT
<213> Rattus norvegicus
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Ala Ala Trp Leu Arg Gly Ser Gly Ala Gln Gln Ser Ala Thr Val Ala  
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Val Asn Gly Gly Trp Ser Thr Trp Thr Glu Trp Ser Val Cys Ser Ala  
 245 250 255  
 Ser Cys Gly Arg Gly Trp Gln Lys Arg Ser Arg Ser Cys Thr Asn Pro  
 260 265 270  
 Ala Pro Leu Asn Gly Gly Ala Phe Cys Glu Gly Gln Asn Val Gln Lys  
 275 280 285  
 Thr Ala Cys Ala Thr Leu Cys Pro Val Asp Gly Ser Trp Ser Ser Trp  
 290 295 300  
 Ser Lys Trp Ser Ala Cys Gly Leu Asp Cys Thr His Trp Arg Ser Arg  
 305 310 315 320  
 Glu Cys Ser Asp Pro Ala Pro Arg Asn Gly Gly Glu Glu Cys Arg Gly  
 325 330 335  
 Ala Asp Leu Asp Thr Arg Asn Cys Thr Ser Asp Leu Cys Leu His Thr  
 340 345 350  
 Ala Ser Cys Pro Glu Asp Val Ala Leu Tyr Ile Gly Leu Val Ala Val  
 355 360 365  
 Ala Val Cys Leu Phe Leu Leu Leu Leu Ala Leu Gly Leu Ile Tyr Cys  
 370 375 380  
 Arg Lys Lys Glu Gly Leu Asp Ser Asp Val Ala Asp Ser Ser Ile Leu  
 385 390 395 400  
 Thr Ser Gly Phe Gln Pro Val Ser Ile Lys Pro Ser Lys Ala Asp Asn  
 405 410 415  
 Pro His Leu Leu Thr Ile Gln Pro Asp Leu Ser Thr Thr Thr Thr Thr  
 420 425 430  
 Tyr Gln Gly Ser Leu Cys Ser Arg Gln Asp Gly Pro Ser Pro Lys Phe  
 435 440 445  
 Gln Leu Ser Asn Gly His Leu Leu Ser Pro Leu Gly Ser Gly Arg His  
 450 455 460  
 Thr Leu His His Ser Ser Pro Thr Ser Glu Ala Glu Asp Phe Val Ser  
 465 470 475 480  
 Arg Leu Ser Thr Gln Asn Tyr Phe Arg Ser Leu Pro Arg Gly Thr Ser  
 485 490 495  
 Asn Met Ala Tyr Gly Thr Phe Asn Phe Leu Gly Gly Arg Leu Met Ile  
 500 505 510  
 Pro Asn Thr Gly Ile Ser Leu Leu Ile Pro Pro Asp Ala Ile Pro Arg  
 515 520 525  
 Gly Lys Ile Tyr Glu Ile Tyr Leu Thr Leu His Lys Pro Glu Asp Val  
 530 535 540



Arg Leu Pro Leu Ala Gly Cys Gln Thr Leu Leu Ser Pro Val Val Ser  
 545 550 555 560  
 Cys Gly Pro Pro Gly Val Leu Leu Thr Arg Pro Val Ile Leu Ala Met  
 565 570 575  
 Asp His Cys Gly Glu Pro Ser Pro Asp Ser Trp Ser Leu Arg Leu Lys  
 580 585 590  
 Lys Gln Ser Cys Glu Gly Ser Trp Glu Asp Val Leu His Leu Gly Glu  
 595 600 605  
 Glu Ser Pro Ser His Leu Tyr Tyr Cys Gln Leu Glu Ala Gly Ala Cys  
 610 615 620  
 Tyr Val Phe Thr Glu Gln Leu Gly Arg Phe Ala Leu Val Gly Glu Ala  
 625 630 635 640  
 Leu Ser Val Ala Ala Thr Lys Arg Leu Arg Leu Leu Leu Phe Ala Pro  
 645 650 655  
 Val Ala Cys Thr Ser Leu Glu Tyr Asn Ile Arg Val Tyr Cys Leu His  
 660 665 670  
 Asp Thr His Asp Ala Leu Lys Glu Val Val Gln Leu Glu Lys Gln Leu  
 675 680 685  
 Gly Gly Gln Leu Ile Gln Glu Pro Arg Val Leu His Phe Lys Asp Ser  
 690 695 700  
 Tyr His Asn Leu Arg Leu Ser Ile His Asp Val Pro Ser Ser Leu Trp  
 705 710 715 720  
 Lys Ser Lys Leu Leu Val Ser Tyr Gln Glu Ile Pro Phe Tyr His Ile  
 725 730 735  
 Trp Asn Gly Thr Gln Gln Tyr Leu His Cys Thr Phe Thr Leu Glu Arg  
 740 745 750  
 Ile Asn Ala Ser Thr Ser Asp Leu Ala Cys Lys Val Trp Val Trp Gln  
 755 760 765  
 Val Glu Gly Asp Gly Gln Ser Phe Asn Ile Asn Phe Asn Ile Thr Lys  
 770 775 780  
 Asp Thr Arg Phe Ala Glu Leu Leu Ala Leu Glu Ser Glu Gly Gly Val  
 785 790 795 800  
 Pro Ala Leu Val Gly Pro Ser Ala Phe Lys Ile Pro Phe Leu Ile Arg  
 805 810 815  
 Gln Lys Ile Ile Ala Ser Leu Asp Pro Pro Cys Ser Arg Gly Ala Asp  
 820 825 830  
 Trp Arg Thr Leu Ala Gln Lys Leu His Leu Asp Ser His Leu Ser Phe  
 835 840 845

Phe Ala Ser Lys Pro Ser Pro Thr Ala Met Ile Leu Asn Leu Trp Glu  
850 855 860

Ala Arg His Phe Pro Asn Gly Asn Leu Gly Gln Leu Ala Ala Ala Val  
865 870 875 880

Ala Gly Leu Gly Gln Pro Asp Ala Gly Leu Phe Thr Val Ser Glu Ala  
885 890 895

Glu Cys

<210> 14

<211> 544

<212> PRT

<213> Homo sapiens

<400> 14

Ala Arg Gly Asp Val Ala Leu Tyr Val Gly Leu Ile Ala Val Ala Val  
1 5 10 15

Cys Leu Val Leu Leu Leu Leu Val Leu Ile Leu Val Tyr Cys Arg Lys  
20 25 30

Lys Glu Gly Leu Asp Ser Asp Val Ala Asp Ser Ser Ile Leu Thr Ser  
35 40 45

Gly Phe Gln Pro Val Ser Ile Lys Pro Ser Lys Ala Asp Asn Pro His  
50 55 60

Leu Leu Thr Ile Gln Pro Asp Leu Ser Thr Thr Thr Thr Tyr Gln  
65 70 75 80

Gly Ser Leu Cys Pro Arg Gln Asp Gly Pro Ser Pro Lys Phe Gln Leu  
85 90 95

Thr Asn Gly His Leu Leu Ser Pro Leu Gly Gly Gly Arg His Thr Leu  
100 105 110

His His Ser Ser Pro Thr Ser Glu Ala Glu Glu Phe Val Ser Arg Leu  
115 120 125

Ser Thr Gln Asn Tyr Phe Arg Ser Leu Pro Arg Gly Thr Ser Asn Met  
130 135 140

Thr Tyr Gly Thr Phe Asn Phe Leu Gly Gly Arg Leu Met Ile Pro Asn  
145 150 155 160

Thr Gly Ile Ser Leu Leu Ile Pro Pro Asp Ala Ile Pro Arg Gly Lys  
165 170 175

Ile Tyr Glu Ile Tyr Leu Thr Leu His Lys Pro Glu Asp Val Arg Leu  
180 185 190

Pro Leu Ala Gly Cys Gln Thr Leu Leu Ser Pro Ile Val Ser Cys Gly  
195 200 205

Pro Pro Gly Val Leu Leu Thr Arg Pro Val Ile Leu Ala Met Asp His  
 210 215 220  
 Cys Gly Glu Pro Ser Pro Asp Ser Trp Ser Leu Arg Leu Lys Lys Gln  
 225 230 235 240  
 Ser Cys Glu Gly Ser Trp Glu Asp Val Leu His Leu Gly Glu Glu Ala  
 245 250 255  
 Pro Ser His Leu Tyr Tyr Cys Gln Leu Glu Ala Ser Ala Cys Tyr Val  
 260 265 270  
 Phe Thr Glu Gln Leu Gly Arg Phe Ala Leu Val Gly Glu Ala Leu Ser  
 275 280 285  
 Val Ala Ala Ala Lys Arg Leu Lys Leu Leu Leu Phe Ala Pro Val Ala  
 290 295 300  
 Cys Thr Ser Leu Glu Tyr Asn Ile Arg Val Tyr Cys Leu His Asp Thr  
 305 310 315 320  
 His Asp Ala Leu Lys Glu Val Val Gln Leu Glu Lys Gln Leu Gly Gly  
 325 330 335  
 Gln Leu Ile Gln Glu Pro Arg Val Leu His Phe Lys Asp Ser Tyr His  
 340 345 350  
 Asn Leu Arg Leu Ser Ile His Asp Val Pro Ser Ser Leu Trp Lys Ser  
 355 360 365  
 Lys Leu Leu Val Ser Tyr Gln Glu Ile Pro Phe Tyr His Ile Trp Asn  
 370 375 380  
 Gly Thr Gln Arg Tyr Leu His Cys Thr Phe Thr Leu Glu Arg Val Ser  
 385 390 395 400  
 Pro Ser Thr Ser Asp Leu Ala Cys Lys Leu Trp Val Trp Gln Val Glu  
 405 410 415  
 Gly Asp Gly Gln Ser Phe Ser Ile Asn Phe Asn Ile Thr Lys Asp Thr  
 420 425 430  
 Arg Phe Ala Glu Leu Leu Ala Leu Glu Ser Glu Ala Gly Val Pro Ala  
 435 440 445  
 Leu Val Gly Pro Ser Ala Phe Lys Ile Pro Phe Leu Ile Arg Gln Lys  
 450 455 460  
 Ile Ile Ser Ser Leu Asp Pro Pro Cys Arg Arg Gly Ala Asp Trp Arg  
 465 470 475 480  
 Thr Leu Ala Gln Lys Leu His Leu Asp Ser His Leu Ser Phe Phe Ala  
 485 490 495  
 Ser Lys Pro Ser Pro Thr Ala Met Ile Leu Asn Leu Trp Glu Ala Arg  
 500 505 510

His Phe Pro Asn Gly Asn Leu Ser Gln Leu Ala Ala Ala Val Ala Gly  
 515 520 525

Leu Gly Gln Pro Asp Ala Gly Leu Phe Thr Val Ser Glu Ala Glu Cys  
 530 535 540

<210> 15

<211> 931

<212> PRT

<213> *Caenorhabditis elegans*

<400> 15

Met Arg Lys Gly Leu Arg Ala Thr Ala Ala Arg Cys Gly Leu Gly Leu  
 1 5 10 15

Gly Tyr Leu Leu Gln Met Leu Val Leu Pro Ala Leu Ala Leu Leu Ser  
 20 25 30

Ala Ser Gly Thr Gly Ser Ala Ala Gln Asp Asp Glu Phe Phe His Glu  
 35 40 45

Leu Pro Glu Thr Phe Pro Ser Asp Pro Pro Glu Pro Leu Pro His Phe  
 50 55 60

Leu Ile Glu Pro Glu Glu Ala Tyr Ile Val Lys Asn Lys Pro Val Asn  
 65 70 75 80

Leu Tyr Cys Lys Ala Ser Pro Ala Thr Gln Ile Tyr Phe Lys Cys Asn  
 85 90 95

Ser Glu Trp Val His Gln Lys Asp His Val Val Asp Glu Arg Val Asp  
 100 105 110

Glu Thr Ser Gly Leu Ile Val Arg Glu Val Ser Ile Glu Ile Ser Arg  
 115 120 125

Gln Gln Val Glu Glu Leu Phe Gly Pro Glu Asp Tyr Trp Cys Gln Cys  
 130 135 140

Val Ala Trp Ser Ser Ala Gly Thr Thr Lys Ser Arg Lys Ala Tyr Val  
 145 150 155 160

Arg Ile Ala Tyr Leu Arg Lys Thr Phe Glu Gln Glu Pro Leu Gly Lys  
 165 170 175

Glu Val Ser Leu Glu Gln Glu Val Leu Leu Gln Cys Arg Pro Pro Glu  
 180 185 190

Gly Ile Pro Val Ala Glu Val Glu Trp Leu Lys Asn Glu Asp Ile Ile  
 195 200 205

Asp Pro Ala Glu Asp Arg Asn Phe Tyr Ile Thr Ile Asp His Asn Leu

210	215	220
Ile Ile Lys Gln Ala Arg Leu Ser Asp Thr Ala Asn Tyr Thr Cys Val 225 230 235 240		
Ala Lys Asn Ile Val Ala Lys Arg Lys Ser Thr Thr Ala Thr Val Ile 245 250 255		
Val Tyr Val Asn Gly Gly Trp Ser Thr Trp Thr Glu Trp Ser Val Cys 260 265 270		
Asn Ser Arg Cys Gly Arg Gly Tyr Gln Lys Arg Thr Arg Thr Cys Thr 275 280 285		
Asn Pro Ala Pro Leu Asn Gly Gly Ala Phe Cys Glu Gly Gln Ser Val 290 295 300		
Gln Lys Ile Ala Cys Thr Thr Leu Cys Pro Val Asp Gly Arg Trp Thr 305 310 315 320		
Ser Trp Ser Lys Trp Ser Thr Cys Gly Thr Glu Cys Thr His Trp Arg 325 330 335		
Arg Arg Glu Cys Thr Ala Pro Ala Pro Lys Asn Gly Gly Lys Asp Cys 340 345 350		
Asp Gly Leu Val Leu Gln Ser Lys Asn Cys Thr Asp Gly Leu Cys Met 355 360 365		
Gln Ala Ala Pro Asp Ser Asp Asp Val Ala Leu Tyr Val Gly Ile Val 370 375 380		
Ile Ala Val Thr Val Cys Leu Ala Ile Thr Val Val Val Ala Leu Phe 385 390 395 400		
Val Tyr Arg Lys Asn His Arg Asp Phe Glu Ser Asp Ile Ile Asp Ser 405 410 415		
Ser Ala Leu Asn Gly Gly Phe Gln Pro Val Asn Ile Lys Ala Ala Arg 420 425 430		
Gln Asp Leu Leu Ala Val Pro Pro Asp Leu Thr Ser Ala Ala Ala Met 435 440 445		
Tyr Arg Gly Pro Val Tyr Ala Leu His Asp Val Ser Asp Lys Ile Pro 450 455 460		
Met Thr Asn Ser Pro Ile Leu Asp Pro Leu Pro Asn Leu Lys Ile Lys 465 470 475 480		
Val Tyr Asn Ser Ser Gly Ala Val Thr Pro Gln Asp Asp Leu Ala Glu 485 490 495		
Phe Ser Ser Lys Leu Ser Pro Gln Met Thr Gln Ser Leu Leu Glu Asn 500 505 510		
Glu Ala Leu Asn Leu Lys Asn Gln Ser Leu Ala Arg Gln Thr Asp Pro		

515					520					525						
Ser	Cys	Thr	Ala	Phe	Gly	Thr	Phe	Asn	Ser	Leu	Gly	Gly	His	Leu	Ile	
530					535					540						
Ile	Pro	Asn	Ser	Gly	Val	Ser	Leu	Leu	Ile	Pro	Ala	Gly	Ala	Ile	Pro	
545					550					555					560	
Gln	Gly	Arg	Val	Tyr	Glu	Met	Tyr	Val	Thr	Val	His	Arg	Lys	Glu	Asn	
565					570					575						
Met	Arg	Pro	Pro	Met	Glu	Asp	Ser	Gln	Thr	Leu	Leu	Thr	Pro	Val	Val	
580					585					590						
Ser	Cys	Gly	Pro	Pro	Gly	Ala	Leu	Leu	Thr	Arg	Pro	Val	Ile	Leu	Thr	
595					600					605						
Leu	His	His	Cys	Ala	Asp	Pro	Ser	Thr	Glu	Asp	Trp	Lys	Ile	Gln	Leu	
610					615					620						
Lys	Asn	Gln	Ala	Val	Gln	Gly	Gln	Trp	Glu	Asp	Val	Val	Val	Val	Gly	
625					630					635					640	
Glu	Glu	Asn	Phe	Thr	Thr	Pro	Cys	Tyr	Ile	Gln	Leu	Asp	Ala	Glu	Ala	
645					650					655						
Cys	His	Ile	Leu	Thr	Glu	Asn	Leu	Ser	Thr	Tyr	Ala	Leu	Val	Gly	Gln	
660					665					670						
Ser	Thr	Thr	Lys	Ala	Ala	Ala	Lys	Arg	Leu	Lys	Leu	Ala	Ile	Phe	Gly	
675					680					685						
Pro	Leu	Cys	Cys	Ser	Ser	Leu	Glu	Tyr	Ser	Ile	Arg	Val	Tyr	Cys	Leu	
690					695					700						
Asp	Asp	Thr	Gln	Asp	Ala	Leu	Lys	Glu	Val	Leu	Gln	Leu	Glu	Arg	Gln	
705					710					715					720	
Met	Gly	Gly	Gln	Leu	Leu	Glu	Glu	Pro	Lys	Ala	Leu	His	Phe	Lys	Gly	
725					730					735						
Ser	Ile	His	Asn	Leu	Arg	Leu	Ser	Ile	His	Asp	Ile	Ala	His	Ser	Leu	
740					745					750						
Trp	Lys	Ser	Lys	Leu	Leu	Ala	Lys	Tyr	Gln	Glu	Ile	Pro	Phe	Tyr	His	
755					760					765						
Ile	Trp	Ser	Gly	Ser	Gln	Arg	Asn	Leu	His	Cys	Thr	Phe	Thr	Leu	Glu	
770					775					780						
Arg	Leu	Ser	Leu	Asn	Thr	Val	Glu	Leu	Val	Cys	Lys	Leu	Cys	Val	Arg	
785					790					795					800	
Gln	Val	Glu	Gly	Glu	Gly	Gln	Ile	Phe	Gln	Leu	Asn	Cys	Thr	Val	Ser	
805					810					815						
Glu	Glu	Pro	Thr	Gly	Ile	Asp	Leu	Pro	Leu	Leu	Asp	Pro	Ala	Ser	Thr	

820					825					830						
Ile	Thr	Thr	Val	Thr	Gly	Pro	Ser	Ala	Phe	Ser	Ile	Pro	Leu	Pro	Ile	
835					840					845						
Arg	Gln	Lys	Leu	Cys	Ser	Ser	Leu	Asp	Ala	Pro	Gln	Thr	Arg	Gly	His	
850					855					860						
Asp	Trp	Arg	Met	Leu	Ala	His	Lys	Leu	Asn	Leu	Asp	Arg	Tyr	Leu	Asn	
865					870					875					880	
Tyr	Phe	Ala	Thr	Lys	Ser	Ser	Pro	Thr	Gly	Val	Ile	Leu	Asp	Leu	Trp	
885					890					895						
Glu	Ala	Gln	Asn	Phe	Pro	Asp	Gly	Asn	Leu	Ser	Met	Leu	Ala	Ala	Val	
900					905					910						
Leu	Glu	Glu	Met	Gly	Arg	His	Glu	Thr	Val	Val	Ser	Leu	Ala	Ala	Glu	
915					920					925						
Gly	Gln	Tyr														
930																

<210> 16  
 <211> 931  
 <212> PRT  
 <213> *Caenorhabditis elegans*

<400> 16															
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Gly	Tyr	Leu	Leu	Gln	Met	Leu	Val	Leu	Pro	Ala	Leu	Ala	Leu	Leu	Ser
20				25				30							
Ala	Ser	Gly	Thr	Gly	Ser	Ala	Ala	Gln	Asp	Asp	Asp	Phe	Phe	His	Glu
35				40				45							
Leu	Pro	Glu	Thr	Phe	Pro	Ser	Asp	Pro	Pro	Glu	Pro	Leu	Pro	His	Phe
50				55				60							
Leu	Ile	Glu	Pro	Glu	Glu	Ala	Tyr	Ile	Val	Lys	Asn	Lys	Pro	Val	Asn
65				70				75				80			
Leu	Tyr	Cys	Lys	Ala	Ser	Pro	Ala	Thr	Gln	Ile	Tyr	Phe	Lys	Cys	Asn
85				90				95							
Ser	Glu	Trp	Val	His	Gln	Lys	Asp	His	Ile	Val	Asp	Glu	Arg	Val	Asp
100				105				110							
Glu	Thr	Ser	Gly	Leu	Ile	Val	Arg	Glu	Val	Ser	Ile	Glu	Ile	Ser	Arg
115				120				125							
Gln	Gln	Val	Glu	Glu	Leu	Phe	Gly	Pro	Glu	Asp	Tyr	Trp	Cys	Gln	Cys
130				135				140							

Val	Ala	Trp	Ser	Ser	Ala	Gly	Thr	Thr	Lys	Ser	Arg	Lys	Ala	Tyr	Val	145	150	155	160
Arg	Ile	Ala	Tyr	Leu	Arg	Lys	Thr	Phe	Glu	Gln	Glu	Pro	Leu	Gly	Lys	165	170	175	
Glu	Val	Ser	Leu	Glu	Gln	Glu	Val	Leu	Leu	Gln	Cys	Arg	Pro	Pro	Glu	180	185	190	
Gly	Ile	Pro	Val	Ala	Glu	Val	Glu	Trp	Leu	Lys	Asn	Glu	Asp	Ile	Ile	195	200	205	
Asp	Pro	Val	Glu	Asp	Arg	Asn	Phe	Tyr	Ile	Thr	Ile	Asp	His	Asn	Leu	210	215	220	
Ile	Ile	Lys	Gln	Ala	Arg	Leu	Ser	Asp	Thr	Ala	Asn	Tyr	Thr	Cys	Val	225	230	235	240
Ala	Lys	Asn	Ile	Val	Ala	Lys	Arg	Lys	Ser	Thr	Thr	Ala	Thr	Val	Ile	245	250	255	
Val	Tyr	Val	Asn	Gly	Gly	Trp	Ser	Thr	Trp	Thr	Glu	Trp	Ser	Val	Cys	260	265	270	
Asn	Ser	Arg	Cys	Gly	Arg	Gly	Tyr	Gln	Lys	Arg	Thr	Arg	Thr	Cys	Thr	275	280	285	
Asn	Pro	Ala	Pro	Leu	Asn	Gly	Gly	Ala	Phe	Cys	Glu	Gly	Gln	Ser	Val	290	295	300	
Gln	Lys	Ile	Ala	Cys	Thr	Thr	Leu	Cys	Pro	Val	Asp	Gly	Arg	Trp	Thr	305	310	315	320
Pro	Trp	Ser	Lys	Trp	Ser	Thr	Cys	Gly	Thr	Glu	Cys	Thr	His	Trp	Arg	325	330	335	
Arg	Arg	Glu	Cys	Thr	Ala	Pro	Ala	Pro	Lys	Asn	Gly	Gly	Lys	Asp	Cys	340	345	350	
Asp	Gly	Leu	Val	Leu	Gln	Ser	Lys	Asn	Cys	Thr	Asp	Gly	Leu	Cys	Met	355	360	365	
Gln	Thr	Ala	Pro	Asp	Ser	Asp	Asp	Val	Ala	Leu	Tyr	Val	Gly	Ile	Val	370	375	380	
Ile	Ala	Val	Ile	Val	Cys	Leu	Ala	Ile	Ser	Val	Val	Val	Ala	Leu	Phe	385	390	395	400
Val	Tyr	Arg	Lys	Asn	His	Arg	Asp	Phe	Glu	Ser	Asp	Ile	Ile	Asp	Ser	405	410	415	
Ser	Ala	Leu	Asn	Gly	Gly	Phe	Gln	Pro	Val	Asn	Ile	Lys	Ala	Ala	Arg	420	425	430	
Gln	Asp	Leu	Leu	Ala	Val	Pro	Pro	Asp	Leu	Thr	Ser	Ala	Ala	Ala	Met	435	440	445	



Tyr	Arg	Gly	Pro	Val	Tyr	Ala	Leu	His	Asp	Val	Ser	Asp	Lys	Ile	Pro	450	455	460	
Met	Thr	Asn	Ser	Pro	Ile	Leu	Asp	Pro	Leu	Pro	Asn	Leu	Lys	Ile	Lys	465	470	475	480
Val	Tyr	Asn	Thr	Ser	Gly	Ala	Val	Thr	Pro	Gln	Asp	Asp	Leu	Ser	Glu	485	490	495	
Phe	Thr	Ser	Lys	Leu	Ser	Pro	Gln	Met	Thr	Gln	Ser	Leu	Leu	Glu	Asn	500	505	510	
Glu	Ala	Leu	Ser	Leu	Lys	Asn	Gln	Ser	Leu	Ala	Arg	Gln	Thr	Asp	Pro	515	520	525	
Ser	Cys	Thr	Ala	Phe	Gly	Ser	Phe	Asn	Ser	Leu	Gly	Gly	His	Leu	Ile	530	535	540	
Val	Pro	Asn	Ser	Gly	Val	Ser	Leu	Leu	Ile	Pro	Ala	Gly	Ala	Ile	Pro	545	550	555	560
Gln	Gly	Arg	Val	Tyr	Glu	Met	Tyr	Val	Thr	Val	His	Arg	Lys	Glu	Thr	565	570	575	
Met	Arg	Pro	Pro	Met	Asp	Asp	Ser	Gln	Thr	Leu	Leu	Thr	Pro	Val	Val	580	585	590	
Ser	Cys	Gly	Pro	Pro	Gly	Ala	Leu	Leu	Thr	Arg	Pro	Val	Val	Leu	Thr	595	600	605	
Met	His	His	Cys	Ala	Asp	Pro	Asn	Thr	Glu	Asp	Trp	Lys	Ile	Leu	Leu	610	615	620	
Lys	Asn	Gln	Ala	Ala	Gln	Gly	Gln	Trp	Glu	Asp	Val	Val	Val	Val	Gly	625	630	635	640
Glu	Glu	Asn	Phe	Thr	Thr	Pro	Cys	Tyr	Ile	Gln	Leu	Asp	Ala	Glu	Ala	645	650	655	
Cys	His	Ile	Leu	Thr	Glu	Asn	Leu	Ser	Thr	Tyr	Ala	Leu	Val	Gly	His	660	665	670	
Ser	Thr	Thr	Lys	Ala	Ala	Ala	Lys	Arg	Leu	Lys	Leu	Ala	Ile	Phe	Gly	675	680	685	
Pro	Leu	Cys	Cys	Ser	Ser	Leu	Glu	Tyr	Ser	Ile	Arg	Val	Tyr	Cys	Leu	690	695	700	
Asp	Asp	Thr	Gln	Asp	Ala	Leu	Lys	Glu	Ile	Leu	His	Leu	Glu	Arg	Gln	705	710	715	720
Met	Gly	Gly	Gln	Leu	Leu	Glu	Glu	Pro	Lys	Ala	Leu	His	Phe	Lys	Gly	725	730	735	
Ser	Thr	His	Asn	Leu	Arg	Leu	Ser	Ile	His	Asp	Ile	Ala	His	Ser	Leu	740	745	750	

Trp Lys Ser Lys Leu Leu Ala Lys Tyr Gln Glu Ile Pro Phe Tyr His  
755 760 765

Val Trp Ser Gly Ser Gln Arg Asn Leu His Cys Thr Phe Thr Leu Glu  
770 775 780

Arg Phe Ser Leu Asn Thr Val Glu Leu Val Cys Lys Leu Cys Val Arg  
785 790 795 800

Gln Val Glu Gly Glu Gly Gln Ile Phe Gln Leu Asn Cys Thr Val Ser  
805 810 815

Glu Glu Pro Thr Gly Ile Asp Leu Pro Leu Leu Asp Pro Ala Asn Thr  
820 825 830

Ile Thr Thr Val Thr Gly Pro Ser Ala Phe Ser Ile Pro Leu Pro Ile  
835 840 845

Arg Gln Lys Leu Cys Ser Ser Leu Asp Ala Pro Gln Thr Arg Gly His  
850 855 860

Asp Trp Arg Met Leu Ala His Lys Leu Asn Leu Asp Arg Tyr Leu Asn  
865 870 875 880

Tyr Phe Ala Thr Lys Ser Ser Pro Thr Gly Val Ile Leu Asp Leu Trp  
885 890 895

Glu Ala Gln Asn Phe Pro Asp Gly Asn Leu Ser Met Leu Ala Ala Val  
900 905 910

Leu Glu Glu Met Gly Arg His Glu Thr Val Val Ser Leu Ala Ala Glu  
915 920 925

Gly Gln Tyr  
930

<210> 17

<211> 931

<212> PRT

<213> Caenorhabditis elegans

<400> 17

Met Arg Lys Gly Leu Arg Ala Thr Ala Ala Arg Cys Gly Leu Gly Leu  
1 5 10 15

Gly Tyr Leu Leu Gln Met Leu Val Leu Pro Ala Leu Ala Leu Leu Ser  
20 25 30

Ala Ser Gly Thr Gly Ser Ala Ala Gln Asp Asp Asp Phe Phe His Glu  
35 40 45

Leu Pro Glu Thr Phe Pro Ser Asp Pro Pro Glu Pro Leu Pro His Phe  
50 55 60

Leu Ile Glu Pro Glu Glu Ala Tyr Ile Val Lys Asn Lys Pro Val Asn  
65 70 75 80

Leu	Tyr	Cys	Lys	Ala	Ser	Pro	Ala	Thr	Gln	Ile	Tyr	Phe	Lys	Cys	Asn		
				85					90					95			
Ser	Glu	Trp	Val	His	Gln	Lys	Asp	His	Ile	Val	Asp	Glu	Arg	Val	Asp		
			100					105					110				
Glu	Thr	Ser	Gly	Leu	Ile	Val	Arg	Glu	Val	Ser	Ile	Glu	Ile	Ser	Arg		
		115					120					125					
Gln	Gln	Val	Glu	Glu	Leu	Phe	Gly	Pro	Glu	Asp	Tyr	Trp	Cys	Gln	Cys		
	130					135					140						
Val	Ala	Trp	Ser	Ser	Ala	Gly	Thr	Thr	Lys	Ser	Arg	Lys	Ala	Tyr	Val		
145					150					155					160		
Arg	Ile	Ala	Tyr	Leu	Arg	Lys	Thr	Phe	Glu	Gln	Glu	Pro	Leu	Gly	Lys		
				165					170					175			
Glu	Val	Ser	Leu	Glu	Gln	Glu	Val	Leu	Leu	Gln	Cys	Arg	Pro	Pro	Glu		
			180					185					190				
Gly	Ile	Pro	Val	Ala	Glu	Val	Glu	Trp	Leu	Lys	Asn	Glu	Asp	Ile	Ile		
		195					200					205					
Asp	Pro	Val	Glu	Asp	Arg	Asn	Phe	Tyr	Ile	Thr	Ile	Asp	His	Asn	Leu		
	210					215					220						
Ile	Ile	Lys	Gln	Ala	Arg	Leu	Ser	Asp	Thr	Ala	Asn	Tyr	Thr	Cys	Val		
225				230					235						240		
Ala	Lys	Asn	Ile	Val	Ala	Lys	Arg	Lys	Ser	Thr	Thr	Ala	Thr	Val	Ile		
				245					250					255			
Val	Tyr	Val	Asn	Gly	Gly	Trp	Ser	Thr	Trp	Thr	Glu	Trp	Ser	Val	Cys		
			260					265					270				
Asn	Ser	Arg	Cys	Gly	Arg	Gly	Tyr	Gln	Lys	Arg	Thr	Arg	Thr	Cys	Thr		
		275					280					285					
Asn	Pro	Ala	Pro	Leu	Asn	Gly	Gly	Ala	Phe	Cys	Glu	Gly	Gln	Ser	Val		
	290					295					300						
Gln	Lys	Ile	Ala	Cys	Thr	Thr	Leu	Cys	Pro	Val	Asp	Gly	Arg	Trp	Thr		
305				310						315					320		
Pro	Trp	Ser	Lys	Trp	Ser	Thr	Cys	Gly	Thr	Glu	Cys	Thr	His	Trp	Arg		
				325					330					335			
Arg	Arg	Glu	Cys	Thr	Ala	Pro	Ala	Pro	Lys	Asn	Gly	Gly	Lys	Asp	Cys		
			340					345					350				
Asp	Gly	Leu	Val	Leu	Gln	Ser	Lys	Asn	Cys	Thr	Asp	Gly	Leu	Cys	Met		
		355					360					365					
Gln	Thr	Ala	Pro	Asp	Ser	Asp	Asp	Val	Ala	Leu	Tyr	Val	Gly	Ile	Val		
						375					380						

Ile	Ala	Val	Ile	Val	Cys	Leu	Ala	Ile	Ser	Val	Val	Val	Ala	Leu	Phe	385	390	395	400
Val	Tyr	Arg	Lys	Asn	His	Arg	Asp	Phe	Glu	Ser	Asp	Ile	Ile	Asp	Ser	405	410	415	
Ser	Ala	Leu	Asn	Gly	Gly	Phe	Gln	Pro	Val	Asn	Ile	Lys	Ala	Ala	Arg	420	425	430	
Gln	Asp	Leu	Leu	Ala	Val	Pro	Pro	Asp	Leu	Thr	Ser	Ala	Ala	Ala	Met	435	440	445	
Tyr	Arg	Gly	Pro	Val	Tyr	Ala	Leu	His	Asp	Val	Ser	Asp	Lys	Ile	Pro	450	455	460	
Met	Thr	Asn	Ser	Pro	Ile	Leu	Asp	Pro	Leu	Pro	Asn	Leu	Lys	Ile	Lys	465	470	475	480
Val	Tyr	Asn	Thr	Ser	Gly	Ala	Val	Ser	Pro	Gln	Asp	Asp	Leu	Ser	Glu	485	490	495	
Phe	Thr	Ser	Lys	Leu	Ser	Pro	Gln	Met	Thr	Gln	Ser	Leu	Leu	Glu	Asn	500	505	510	
Glu	Ala	Leu	Ser	Leu	Lys	Asn	Gln	Ser	Leu	Ala	Arg	Gln	Thr	Asp	Pro	515	520	525	
Ser	Cys	Thr	Ala	Phe	Gly	Ser	Phe	Asn	Ser	Leu	Gly	Gly	His	Leu	Ile	530	535	540	
Val	Pro	Asn	Ser	Gly	Val	Ser	Leu	Leu	Ile	Pro	Ala	Gly	Ala	Ile	Pro	545	550	555	560
Gln	Gly	Arg	Val	Tyr	Glu	Met	Tyr	Val	Thr	Val	His	Arg	Lys	Glu	Thr	565	570	575	
Met	Arg	Pro	Pro	Met	Asp	Asp	Ser	Gln	Thr	Leu	Leu	Thr	Pro	Val	Val	580	585	590	
Ser	Cys	Gly	Pro	Pro	Gly	Ala	Leu	Leu	Thr	Arg	Pro	Val	Val	Leu	Thr	595	600	605	
Met	His	His	Cys	Ala	Asp	Pro	Asn	Thr	Glu	Asp	Trp	Lys	Ile	Leu	Leu	610	615	620	
Lys	Asn	Gln	Ala	Ala	Gln	Gly	Gln	Trp	Glu	Asp	Val	Val	Val	Val	Gly	625	630	635	640
Glu	Glu	Asn	Phe	Thr	Thr	Pro	Cys	Tyr	Ile	Lys	Leu	Asp	Ala	Glu	Ala	645	650	655	
Cys	His	Ile	Leu	Thr	Glu	Asn	Leu	Ser	Thr	Tyr	Ala	Leu	Val	Gly	His	660	665	670	
Ser	Thr	Thr	Lys	Ala	Ala	Ala	Lys	Arg	Leu	Lys	Leu	Ala	Ile	Phe	Gly	675	680	685	

Pro Leu Cys Cys Ser Ser Leu Glu Tyr Ser Ile Arg Val Tyr Cys Leu  
 690 695 700  
 Asp Asp Thr Gln Asp Ala Leu Lys Glu Ile Leu His Leu Glu Arg Gln  
 705 710 715 720  
 Thr Gly Gly Gln Leu Leu Glu Glu Pro Lys Ala Leu His Phe Lys Gly  
 725 730 735  
 Ser Thr His Asn Leu Arg Leu Ser Ile His Asp Ile Ala His Ser Leu  
 740 745 750  
 Trp Lys Ser Lys Leu Leu Ala Lys Tyr Gln Glu Ile Pro Phe Tyr His  
 755 760 765  
 Val Trp Ser Gly Ser Gln Arg Asn Leu His Cys Thr Phe Thr Leu Glu  
 770 775 780  
 Arg Phe Ser Leu Asn Thr Val Glu Leu Val Cys Lys Leu Cys Val Arg  
 785 790 795 800  
 Gln Val Glu Gly Glu Gly Gln Ile Phe Gln Leu Asn Cys Thr Val Ser  
 805 810 815  
 Glu Glu Pro Thr Gly Ile Asp Leu Pro Leu Leu Asp Pro Ala Asn Thr  
 820 825 830  
 Ile Thr Thr Val Thr Gly Pro Ser Ala Phe Ser Ile Pro Leu Pro Ile  
 835 840 845  
 Arg Gln Lys Leu Cys Ser Ser Leu Asp Ala Pro Gln Thr Arg Gly His  
 850 855 860  
 Asp Trp Arg Met Leu Ala His Lys Leu Asn Leu Asp Arg Tyr Leu Asn  
 865 870 875 880  
 Tyr Phe Ala Thr Lys Ser Ser Pro Thr Gly Val Ile Leu Asp Leu Trp  
 885 890 895  
 Glu Ala Gln Asn Phe Pro Asp Gly Asn Leu Ser Met Leu Ala Ala Val  
 900 905 910  
 Leu Glu Glu Met Gly Arg His Glu Thr Val Val Ser Leu Ala Ala Glu  
 915 920 925  
 Gly Gln Tyr  
 930

<210> 18

<211> 4349

<212> PRT

<213> Homo sapiens

<400> 18

Met Thr Ile Ala Leu Leu Gly Phe Ala Ile Phe Leu Leu His Cys Ala

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Thr	Cys	Glu	Lys	Pro	Leu	Glu	Gly	Ile	Leu	Ser	Ser	Ser	Ala	Trp	His		
		20					25						30				
Phe	Thr	His	Ser	His	Tyr	Asn	Ala	Thr	Ile	Tyr	Glu	Asn	Ser	Ser	Pro		
		35				40						45					
Lys	Thr	Tyr	Val	Glu	Ser	Phe	Glu	Lys	Met	Gly	Ile	Tyr	Leu	Ala	Glu		
	50					55					60						
Pro	Gln	Trp	Ala	Val	Arg	Tyr	Arg	Ile	Ile	Ser	Gly	Asp	Val	Ala	Asn		
65					70					75					80		
Val	Phe	Lys	Thr	Glu	Glu	Tyr	Val	Val	Gly	Asn	Phe	Cys	Phe	Leu	Arg		
				85					90					95			
Ile	Arg	Thr	Lys	Ser	Ser	Asn	Thr	Ala	Leu	Leu	Asn	Arg	Glu	Val	Arg		
			100					105					110				
Asp	Ser	Tyr	Thr	Leu	Ile	Ile	Gln	Ala	Thr	Glu	Lys	Thr	Leu	Glu	Leu		
		115					120					125					
Glu	Ala	Leu	Thr	Arg	Val	Val	Val	His	Ile	Leu	Asp	Gln	Asn	Asp	Leu		
	130					135					140						
Lys	Pro	Leu	Phe	Ser	Pro	Pro	Ser	Tyr	Arg	Val	Thr	Ile	Ser	Glu	Asp		
145					150					155					160		
Met	Pro	Leu	Lys	Ser	Pro	Ile	Cys	Lys	Val	Thr	Ala	Thr	Asp	Ala	Asp		
				165					170					175			
Leu	Gly	Gln	Asn	Ala	Glu	Phe	Tyr	Tyr	Ala	Phe	Asn	Thr	Arg	Ser	Glu		
			180					185					190				
Met	Phe	Ala	Ile	His	Pro	Thr	Ser	Gly	Val	Val	Thr	Val	Ala	Gly	Lys		
		195					200					205					
Leu	Asn	Val	Thr	Trp	Arg	Gly	Lys	His	Glu	Leu	Gln	Val	Leu	Ala	Val		
	210					215					220						
Asp	Arg	Met	Arg	Lys	Ile	Ser	Glu	Gly	Asn	Gly	Phe	Gly	Ser	Leu	Ala		
225					230					235					240		
Ala	Leu	Val	Val	His	Val	Glu	Pro	Ala	Leu	Arg	Lys	Pro	Pro	Ala	Ile		
				245					250					255			
Ala	Ser	Val	Val	Val	Thr	Pro	Pro	Asp	Ser	Asn	Asp	Gly	Thr	Thr	Tyr		
			260					265					270				
Ala	Thr	Val	Leu	Val	Asp	Ala	Asn	Ser	Ser	Gly	Ala	Glu	Val	Glu	Ser		
	275						280					285					
Val	Glu	Val	Val	Gly	Gly	Asp	Pro	Gly	Lys	His	Phe	Lys	Ala	Ile	Lys		
	290					295					300						
Ser	Tyr	Ala	Arg	Ser	Asn	Glu	Phe	Ser	Leu	Val	Ser	Val	Lys	Asp	Ile		

305		310		315		320
Asn Trp Met Glu Tyr Leu His Gly Phe Asn Leu Ser Leu Gln Ala Arg						
	325			330		335
Ser Gly Ser Gly Pro Tyr Phe Tyr Ser Gln Ile Arg Gly Phe His Leu						
	340		345		350	
Pro Pro Ser Lys Leu Ser Ser Leu Lys Phe Glu Lys Ala Val Tyr Arg						
	355		360		365	
Val Gln Leu Ser Glu Phe Ser Pro Pro Gly Ser Arg Val Val Met Val						
	370		375		380	
Arg Val Thr Pro Ala Phe Pro Asn Leu Gln Tyr Val Leu Lys Pro Ser						
385		390		395		400
Ser Glu Asn Val Gly Phe Lys Leu Asn Ala Arg Thr Gly Leu Ile Thr						
	405		410			415
Thr Thr Lys Leu Met Asp Phe His Asp Arg Ala His Tyr Gln Leu His						
	420		425			430
Ile Arg Thr Ser Pro Gly Gln Ala Ser Thr Val Val Val Ile Asp Ile						
	435		440			445
Val Asp Cys Asn Asn His Ala Pro Leu Phe Asn Arg Ser Ser Tyr Asp						
	450		455		460	
Gly Thr Leu Asp Glu Asn Ile Pro Pro Gly Thr Ser Val Leu Ala Val						
465		470		475		480
Thr Ala Thr Asp Arg Asp His Gly Glu Asn Gly Tyr Val Thr Tyr Ser						
	485		490			495
Ile Ala Gly Pro Lys Ala Leu Pro Phe Ser Ile Asp Pro Tyr Leu Gly						
	500		505			510
Ile Ile Ser Thr Ser Lys Pro Met Asp Tyr Glu Leu Met Lys Arg Ile						
	515		520			525
Tyr Thr Phe Arg Val Arg Ala Ser Asp Trp Gly Ser Pro Phe Arg Arg						
	530		535		540	
Glu Lys Glu Val Ser Ile Phe Leu Gln Leu Arg Asn Leu Asn Asp Asn						
545		550		555		560
Gln Pro Met Phe Glu Glu Val Asn Cys Thr Gly Ser Ile Arg Gln Asp						
	565		570			575
Trp Pro Val Gly Lys Ser Ile Met Thr Met Ser Ala Ile Asp Val Asp						
	580		585			590
Glu Leu Gln Asn Leu Lys Tyr Glu Ile Val Ser Gly Asn Glu Leu Glu						
	595		600			605
Tyr Phe Asp Leu Asn His Phe Ser Gly Val Ile Ser Leu Lys Arg Pro						

610					615					620					
Phe 625	Ile	Asn	Leu	Thr	Ala 630	Gly	Gln	Pro	Thr	Ser 635	Tyr	Ser	Leu	Lys	Ile 640
Thr	Ala	Ser	Asp	Gly 645	Lys	Asn	Tyr	Ala	Ser 650	Pro	Thr	Thr	Leu	Asn 655	Ile
Thr	Val	Val	Lys 660	Asp	Pro	His	Phe	Glu 665	Val	Pro	Val	Thr	Cys 670	Asp	Lys
Thr	Gly 675	Val	Leu	Thr	Gln	Phe	Thr 680	Lys	Thr	Ile	Leu	His 685	Phe	Ile	Gly
Leu 690	Gln	Asn	Gln	Glu	Ser	Ser 695	Asp	Glu	Glu	Phe	Thr 700	Ser	Leu	Ser	Thr
Tyr 705	Gln	Ile	Asn	His	Tyr 710	Thr	Pro	Gln	Phe	Glu 715	Asp	His	Phe	Pro	Gln 720
Ser	Ile	Asp	Val	Leu 725	Glu	Ser	Val	Pro	Ile 730	Asn	Thr	Pro	Leu	Ala 735	Arg
Leu	Ala	Ala	Thr 740	Asp	Pro	Asp	Ala	Gly 745	Phe	Asn	Gly	Lys	Leu 750	Val	Tyr
Val	Ile 755	Ala	Asp	Gly	Asn	Glu	Glu 760	Gly	Cys	Phe	Asp 765	Ile	Glu	Leu	Glu
Thr 770	Gly	Leu	Leu	Thr	Val	Ala 775	Ala	Pro	Leu	Asp	Tyr 780	Glu	Ala	Thr	Asn
Phe 785	Tyr	Ile	Leu	Asn	Val 790	Thr	Val	Tyr	Asp	Leu 795	Gly	Thr	Pro	Gln	Lys 800
Ser	Ser	Trp	Lys	Leu 805	Leu	Thr	Val	Asn	Val 810	Lys	Asp	Trp	Asn	Asp 815	Asn
Ala	Pro	Arg	Phe 820	Pro	Pro	Gly	Gly	Tyr 825	Gln	Leu	Thr	Ile	Ser 830	Glu	Asp
Thr	Glu 835	Val	Gly	Thr	Thr	Ile	Ala 840	Glu	Leu	Thr	Thr	Lys 845	Asp	Ala	Asp
Ser	Glu 850	Asp	Asn	Gly	Arg	Val 855	Arg	Tyr	Thr	Leu	Leu 860	Ser	Pro	Thr	Glu
Lys 865	Phe	Ser	Leu	His	Pro 870	Leu	Thr	Gly	Glu	Leu 875	Val	Val	Thr	Gly	His 880
Leu	Asp	Arg	Glu	Ser 885	Glu	Pro	Arg	Tyr	Ile 890	Leu	Lys	Val	Glu	Ala 895	Arg
Asp	Gln	Pro	Ser 900	Lys	Gly	His	Gln	Leu 905	Phe	Ser	Val	Thr	Asp 910	Leu	Ile
Ile	Thr	Leu	Glu	Asp	Val	Asn	Asp	Asn	Ser	Pro	Gln	Cys	Ile	Thr	Glu



915					920					925						
His	Asn	Arg	Leu	Lys	Val	Pro	Glu	Asp	Leu	Pro	Pro	Gly	Thr	Val	Leu	
930					935					940						
Thr	Phe	Leu	Asp	Ala	Ser	Asp	Pro	Asp	Leu	Gly	Pro	Ala	Gly	Glu	Val	
945					950					955					960	
Arg	Tyr	Val	Leu	Met	Asp	Gly	Ala	His	Gly	Thr	Phe	Arg	Val	Asp	Leu	
965					970					975						
Met	Thr	Gly	Ala	Leu	Ile	Leu	Glu	Arg	Glu	Leu	Asp	Phe	Glu	Arg	Arg	
980					985					990						
Ala	Gly	Tyr	Asn	Leu	Ser	Leu	Trp	Ala	Ser	Asp	Gly	Gly	Arg	Pro	Leu	
995					1000					1005						
Ala	Arg	Arg	Thr	Leu	Cys	His	Val	Glu	Val	Ile	Val	Leu	Asp	Val	Asn	
1010					1015					1020						
Glu	Asn	Leu	His	Pro	Pro	His	Phe	Ala	Ser	Phe	Val	His	Gln	Gly	Gln	
1025					1030					1035					1040	
Val	Gln	Glu	Asn	Ser	Pro	Ser	Gly	Thr	Gln	Val	Ile	Val	Val	Ala	Ala	
1045					1050					1055						
Gln	Asp	Asp	Asp	Ser	Gly	Leu	Asp	Gly	Glu	Leu	Gln	Tyr	Phe	Leu	Arg	
1060					1065					1070						
Ala	Gly	Thr	Gly	Leu	Ala	Ala	Phe	Ser	Ile	Asn	Gln	Asp	Thr	Gly	Met	
1075					1080					1085						
Ile	Gln	Thr	Leu	Ala	Pro	Leu	Asp	Arg	Glu	Phe	Ala	Ser	Tyr	Tyr	Trp	
1090					1095					1100						
Leu	Thr	Val	Leu	Ala	Val	Asp	Arg	Gly	Ser	Val	Pro	Leu	Ser	Ser	Val	
1105					1110					1115					1120	
Thr	Glu	Val	Tyr	Ile	Glu	Val	Thr	Asp	Ala	Asn	Asp	Asn	Pro	Pro	Gln	
1125					1130					1135						
Met	Ser	Gln	Ala	Val	Phe	Tyr	Pro	Ser	Ile	Gln	Glu	Asp	Ala	Pro	Val	
1140					1145					1150						
Gly	Thr	Ser	Val	Leu	Gln	Leu	Asp	Ala	Trp	Asp	Pro	Asp	Ser	Ser	Ser	
1155					1160					1165						
Lys	Gly	Lys	Leu	Thr	Phe	Asn	Ile	Thr	Ser	Gly	Asn	Tyr	Met	Gly	Phe	
1170					1175					1180						
Phe	Met	Ile	His	Pro	Val	Thr	Gly	Leu	Leu	Ser	Thr	Ala	Gln	Gln	Leu	
1185					1190					1195					1200	
Asp	Arg	Glu	Asn	Lys	Asp	Glu	His	Ile	Leu	Glu	Val	Thr	Val	Leu	Asp	
1205					1210					1215						
Asn	Gly	Glu	Pro	Ser	Leu	Lys	Ser	Thr	Ser	Arg	Val	Val	Val	Gly	Ile	

1220	1225	1230
Leu Asp Val Asn Asp Asn Pro Pro Ile Phe Ser His Lys Leu Phe Asn 1235	1240	1245
Val Arg Leu Pro Glu Arg Leu Ser Pro Val Ser Pro Gly Pro Val Tyr 1250	1255	1260
Arg Leu Val Ala Ser Asp Leu Asp Glu Gly Leu Asn Gly Arg Val Thr 1265	1270	1275
Tyr Ser Ile Glu Asp Ser Asp Glu Glu Ala Phe Ser Ile Asp Leu Val 1285	1290	1295
Thr Gly Val Val Ser Ser Ser Ser Thr Phe Thr Ala Gly Glu Tyr Asn 1300	1305	1310
Ile Leu Thr Ile Lys Ala Thr Asp Ser Gly Gln Pro Pro Leu Ser Ala 1315	1320	1325
Ser Val Arg Leu His Ile Glu Trp Ile Pro Trp Pro Arg Pro Ser Ser 1330	1335	1340
Ile Pro Leu Ala Phe Asp Glu Thr Tyr Tyr Ser Phe Thr Val Met Glu 1345	1350	1355
Thr Asp Pro Val Asn His Met Val Gly Val Ile Ser Val Glu Gly Arg 1365	1370	1375
Pro Gly Leu Phe Trp Phe Asn Ile Ser Gly Gly Asp Lys Asp Met Asp 1380	1385	1390
Phe Asp Ile Glu Lys Thr Thr Gly Ser Ile Val Ile Ala Arg Pro Leu 1395	1400	1405
Asp Thr Arg Arg Arg Ser Asn Tyr Asn Leu Thr Val Glu Val Thr Asp 1410	1415	1420
Gly Ser Arg Thr Ile Ala Thr Gln Val His Ile Phe Met Ile Ala Asn 1425	1430	1435
Ile Asn His His Arg Pro Gln Phe Leu Glu Thr Arg Tyr Glu Val Arg 1445	1450	1455
Val Pro Gln Asp Thr Val Pro Gly Val Glu Leu Leu Arg Val Gln Ala 1460	1465	1470
Ile Asp Gln Asp Lys Gly Lys Ser Leu Ile Tyr Thr Ile His Gly Ser 1475	1480	1485
Gln Asp Pro Gly Ser Ala Ser Leu Phe Gln Leu Asp Pro Ser Ser Gly 1490	1495	1500
Val Leu Val Thr Val Gly Lys Leu Asp Leu Gly Ser Gly Pro Ser Gln 1505	1510	1515
His Thr Leu Thr Val Met Val Arg Asp Gln Glu Ile Pro Ile Lys Arg		

1525				1530				1535			
Asn Phe Val Trp Val Thr Ile His Val Glu Asp Gly Asn Leu His Pro	1540	1545	1550								
Pro Arg Phe Thr Gln Leu His Tyr Glu Ala Ser Val Pro Asp Thr Ile	1555	1560	1565								
Ala Pro Gly Thr Glu Leu Leu Gln Val Arg Ala Met Asp Ala Asp Arg	1570	1575	1580								
Gly Val Asn Ala Glu Val His Tyr Ser Leu Leu Lys Gly Asn Ser Glu	1585	1590	1595	1600							
Gly Phe Phe Asn Ile Asn Ala Leu Leu Gly Ile Ile Thr Leu Ala Gln	1605	1610	1615								
Lys Leu Asp Gln Ala Asn His Ala Pro His Thr Leu Thr Val Lys Ala	1620	1625	1630								
Glu Asp Gln Gly Ser Pro Gln Trp His Asp Leu Ala Thr Val Ile Ile	1635	1640	1645								
His Val Tyr Pro Ser Asp Arg Ser Ala Pro Ile Phe Ser Lys Ser Glu	1650	1655	1660								
Tyr Phe Val Glu Ile Pro Glu Ser Ile Pro Val Gly Ser Pro Ile Leu	1665	1670	1675	1680							
Leu Val Ser Ala Met Ser Pro Ser Glu Val Thr Tyr Glu Leu Arg Glu	1685	1690	1695								
Gly Asn Lys Asp Gly Val Phe Ser Met Asn Ser Tyr Ser Gly Leu Ile	1700	1705	1710								
Ser Thr Gln Lys Lys Leu Asp His Glu Lys Ile Ser Ser Tyr Gln Leu	1715	1720	1725								
Lys Ile Arg Gly Ser Asn Met Ala Gly Ala Phe Thr Asp Val Met Val	1730	1735	1740								
Val Val Asp Ile Ile Asp Glu Asn Asp Asn Ala Pro Met Phe Leu Lys	1745	1750	1755	1760							
Ser Thr Phe Val Gly Gln Ile Ser Glu Ala Ala Pro Leu Tyr Ser Met	1765	1770	1775								
Ile Met Asp Lys Asn Asn Asn Pro Phe Val Ile His Ala Ser Asp Ser	1780	1785	1790								
Asp Lys Glu Ala Asn Ser Leu Leu Val Tyr Lys Ile Leu Glu Pro Glu	1795	1800	1805								
Ala Leu Lys Phe Phe Lys Ile Asp Pro Ser Met Gly Thr Leu Thr Ile	1810	1815	1820								
Val Ser Glu Met Asp Tyr Glu Ser Met Pro Ser Phe Gln Phe Cys Val											

1825	1830	1835	1840
Tyr Val His Asp Gln Gly Ser Pro Val Leu Phe Ala Pro Arg Pro Ala			
1845	1850	1855	
Gln Val Ile Ile His Val Arg Asp Val Asn Asp Ser Pro Pro Arg Phe			
1860	1865	1870	
Ser Glu Gln Ile Tyr Glu Val Ala Ile Val Gly Pro Ile His Pro Gly			
1875	1880	1885	
Met Glu Leu Leu Met Val Arg Ala Ser Asp Glu Asp Ser Glu Val Asn			
1890	1895	1900	
Tyr Ser Ile Lys Thr Gly Asn Ala Asp Glu Ala Val Thr Ile His Pro			
1905	1910	1915	1920
Val Thr Gly Ser Ile Ser Val Leu Asn Pro Ala Phe Leu Gly Leu Ser			
1925	1930	1935	
Arg Lys Leu Thr Ile Arg Ala Ser Asp Gly Leu Tyr Gln Asp Thr Ala			
1940	1945	1950	
Leu Val Lys Ile Ser Leu Thr Gln Val Leu Asp Lys Ser Leu Gln Phe			
1955	1960	1965	
Asp Gln Asp Val Tyr Trp Ala Ala Val Lys Glu Asn Leu Gln Asp Arg			
1970	1975	1980	
Lys Ala Leu Val Ile Leu Gly Ala Gln Gly Asn His Leu Asn Asp Thr			
1985	1990	1995	2000
Leu Ser Tyr Phe Leu Leu Asn Gly Thr Asp Met Phe His Met Val Gln			
2005	2010	2015	
Ser Ala Gly Val Leu Gln Thr Arg Gly Val Ala Phe Asp Arg Glu Gln			
2020	2025	2030	
Gln Asp Thr His Glu Leu Ala Val Glu Val Arg Asp Asn Arg Thr Pro			
2035	2040	2045	
Gln Arg Val Ala Gln Gly Leu Val Arg Val Ser Ile Glu Asp Val Asn			
2050	2055	2060	
Asp Asn Pro Pro Lys Phe Lys His Leu Pro Tyr Tyr Thr Ile Ile Gln			
2065	2070	2075	2080
Asp Gly Thr Glu Pro Gly Asp Val Leu Phe Gln Val Ser Ala Thr Asp			
2085	2090	2095	
Glu Asp Leu Gly Thr Asn Gly Ala Val Thr Tyr Glu Phe Ala Glu Asp			
2100	2105	2110	
Tyr Thr Tyr Phe Arg Ile Asp Pro Tyr Leu Gly Asp Ile Ser Leu Lys			
2115	2120	2125	
Lys Pro Phe Asp Tyr Gln Ala Leu Asn Lys Tyr His Leu Lys Val Ile			

2130	2135	2140
Ala Arg Asp Gly Gly Thr Pro Ser Leu Gln Ser Glu Glu Glu Val Leu		
2145	2150	2155 2160
Val Thr Val Arg Asn Lys Ser Asn Pro Leu Phe Gln Ser Pro Tyr Tyr		
	2165	2170 2175
Lys Val Arg Val Pro Glu Asn Ile Thr Leu Tyr Thr Pro Ile Leu His		
	2180	2185 2190
Thr Gln Ala Arg Ser Pro Glu Gly Leu Arg Leu Ile Tyr Asn Ile Val		
	2195	2200 2205
Glu Glu Glu Pro Leu Met Leu Phe Thr Thr Asp Phe Lys Thr Gly Val		
	2210	2215 2220
Leu Thr Val Thr Gly Pro Leu Asp Tyr Glu Ser Lys Thr Lys His Val		
	2225	2230 2235 2240
Phe Thr Val Arg Ala Thr Asp Thr Ala Leu Gly Ser Phe Ser Glu Ala		
	2245	2250 2255
Thr Val Glu Val Leu Val Glu Asp Val Asn Asp Asn Pro Pro Thr Phe		
	2260	2265 2270
Ser Gln Leu Val Tyr Thr Thr Ser Ile Ser Glu Gly Leu Pro Ala Gln		
	2275	2280 2285
Thr Pro Val Ile Gln Leu Leu Ala Ser Asp Gln Asp Ser Gly Arg Asn		
	2290	2295 2300
Arg Asp Val Ser Tyr Gln Ile Val Glu Asp Gly Ser Asp Val Ser Lys		
	2305	2310 2315 2320
Phe Phe Gln Ile Asn Gly Ser Thr Gly Glu Met Ser Thr Val Gln Glu		
	2325	2330 2335
Leu Asp Tyr Glu Ala Gln Gln His Phe His Val Lys Val Arg Ala Met		
	2340	2345 2350
Asp Lys Gly Asp Pro Pro Leu Thr Gly Glu Thr Leu Val Val Val Asn		
	2355	2360 2365
Val Ser Asp Ile Asn Asp Asn Pro Pro Glu Phe Arg Gln Pro Gln Tyr		
	2370	2375 2380
Glu Ala Asn Val Ser Glu Leu Ala Thr Cys Gly His Leu Val Leu Lys		
	2385	2390 2395 2400
Val Gln Ala Ile Asp Pro Asp Ser Arg Asp Thr Ser Arg Leu Glu Tyr		
	2405	2410 2415
Leu Ile Leu Ser Gly Asn Gln Asp Arg His Phe Phe Ile Asn Ser Ser		
	2420	2425 2430
Ser Gly Ile Ile Ser Met Phe Asn Leu Cys Lys Lys His Leu Asp Ser		

2435	2440	2445
Ser Tyr Asn Leu Arg Val Gly Ala Ser Asp Gly Val Phe Arg Ala Thr		
2450	2455	2460
Val Pro Val Tyr Ile Asn Thr Thr Asn Ala Asn Lys Tyr Ser Pro Glu		
2465	2470	2475 2480
Phe Gln Gln His Leu Tyr Glu Ala Glu Leu Ala Glu Asn Ala Met Val		
2485	2490	2495
Gly Thr Lys Val Ile Asp Leu Leu Ala Ile Asp Lys Asp Ser Gly Pro		
2500	2505	2510
Tyr Gly Thr Ile Asp Tyr Thr Ile Ile Asn Lys Leu Ala Ser Glu Lys		
2515	2520	2525
Phe Ser Ile Asn Pro Asn Gly Gln Ile Ala Thr Leu Gln Lys Leu Asp		
2530	2535	2540
Arg Glu Asn Ser Thr Glu Arg Val Ile Ala Ile Lys Val Met Ala Arg		
2545	2550	2555 2560
Asp Gly Gly Gly Arg Val Ala Phe Cys Thr Val Lys Ile Ile Leu Thr		
2565	2570	2575
Asp Glu Asn Asp Asn Pro Pro Gln Phe Lys Ala Ser Glu Tyr Thr Val		
2580	2585	2590
Ser Ile Gln Ser Asn Val Ser Lys Asp Ser Pro Val Ile Gln Val Leu		
2595	2600	2605
Ala Tyr Asp Ala Asp Glu Gly Gln Asn Ala Asp Val Thr Tyr Ser Val		
2610	2615	2620
Asn Pro Glu Asp Leu Val Lys Asp Val Ile Glu Ile Asn Pro Val Thr		
2625	2630	2635 2640
Gly Val Val Lys Val Lys Asp Ser Leu Val Gly Leu Glu Asn Gln Thr		
2645	2650	2655
Leu Asp Phe Phe Ile Lys Ala Gln Asp Gly Gly Pro Pro His Trp Asn		
2660	2665	2670
Ser Leu Val Pro Val Arg Leu Gln Val Val Pro Lys Lys Val Ser Leu		
2675	2680	2685
Pro Lys Phe Ser Glu Pro Leu Tyr Thr Phe Ser Ala Pro Glu Asp Leu		
2690	2695	2700
Pro Glu Gly Ser Glu Ile Gly Ile Val Lys Ala Val Ala Ala Gln Asp		
2705	2710	2715 2720
Pro Val Ile Tyr Ser Leu Val Arg Gly Thr Thr Pro Glu Ser Asn Lys		
2725	2730	2735
Asp Gly Val Phe Ser Leu Asp Pro Asp Thr Gly Val Ile Lys Val Arg		

2740	2745	2750
Lys Pro Met Asp His Glu Ser Thr	Lys Leu Tyr Gln Ile Asp Val Met	
2755	2760	2765
Ala His Cys Leu Gln Asn Thr Asp Val Val Ser Leu Val Ser Val Asn		
2770	2775	2780
Ile Gln Val Gly Asp Val Asn Asp Asn Arg Pro Val Phe Glu Ala Asp		
2785	2790	2795 2800
Pro Tyr Lys Ala Val Leu Thr Glu Asn Met Pro Val Gly Thr Ser Val		
2805	2810	2815
Ile Gln Val Thr Ala Ile Asp Lys Asp Thr Gly Arg Asp Gly Gln Val		
2820	2825	2830
Ser Tyr Arg Leu Ser Ala Asp Pro Gly Ser Asn Val His Glu Leu Phe		
2835	2840	2845
Ala Ile Asp Ser Glu Ser Gly Trp Ile Thr Thr Leu Gln Glu Leu Asp		
2850	2855	2860
Cys Glu Thr Cys Gln Thr Tyr His Phe His Val Val Ala Tyr Asp His		
2865	2870	2875 2880
Gly Gln Thr Ile Gln Leu Ser Ser Gln Ala Leu Val Gln Val Ser Ile		
2885	2890	2895
Thr Asp Glu Asn Asp Asn Ala Pro Arg Phe Ala Ser Glu Glu Tyr Arg		
2900	2905	2910
Gly Ser Val Val Glu Asn Ser Glu Pro Gly Glu Leu Val Ala Thr Leu		
2915	2920	2925
Lys Thr Leu Asp Ala Asp Ile Ser Glu Gln Asn Arg Gln Val Thr Cys		
2930	2935	2940
Tyr Ile Thr Glu Gly Asp Pro Leu Gly Gln Phe Gly Ile Ser Gln Val		
2945	2950	2955 2960
Gly Asp Glu Trp Arg Ile Ser Ser Arg Lys Thr Leu Asp Arg Glu His		
2965	2970	2975
Thr Ala Lys Tyr Leu Leu Arg Val Thr Ala Ser Asp Gly Lys Phe Gln		
2980	2985	2990
Ala Ser Val Thr Val Glu Ile Phe Val Leu Asp Val Asn Asp Asn Ser		
2995	3000	3005
Pro Gln Cys Ser Gln Leu Leu Tyr Thr Gly Lys Val His Glu Asp Val		
3010	3015	3020
Phe Pro Gly His Phe Ile Leu Lys Val Ser Ala Thr Asp Leu Asp Thr		
3025	3030	3035 3040
Asp Thr Asn Ala Gln Ile Thr Tyr Ser Leu His Gly Pro Gly Ala His		

3045					3050					3055				
Glu Phe Lys Leu Asp	Pro His Thr Gly	Glu Leu Thr Thr	Leu Thr Ala											
3060		3065										3070		
Leu Asp Arg Glu Arg Lys Asp	Val Phe Asn Leu Val	Ala Lys Ala Thr												
3075		3080										3085		
Asp Gly Gly Gly Arg Ser Cys Gln	Ala Asp Ile Thr	Leu His Val Glu												
3090		3095										3100		
Asp Val Asn Asp Asn Ala Pro Arg Phe	Phe Pro Ser His Cys Ala Val													
3105		3110										3115	3120	
Ala Val Phe Asp Asn Thr Thr Val Lys	Thr Pro Val Ala Val Val Phe													
	3125											3130	3135	
Ala Arg Asp Pro Asp Gln Gly Ala Asn	Ala Gln Val Val Tyr Ser Leu													
	3140												3150	
Pro Asp Ser Ala Glu Gly His Phe Ser	Ile Asp Ala Thr Thr Gly Val													
	3155												3160	
Ile Arg Leu Glu Lys Pro Leu Gln Val	Arg Pro Gln Ala Pro Leu Glu													
	3170												3175	
Leu Thr Val Arg Ala Ser Asp Leu Gly	Thr Pro Ile Pro Leu Ser Thr													
	3185												3190	
Leu Gly Thr Val Thr Val Ser Val Val	Gly Leu Glu Asp Tyr Leu Pro													
	3205												3210	
Val Phe Leu Asn Thr Glu His Ser Val	Gln Val Pro Glu Asp Ala Pro													
	3220												3225	
Pro Gly Thr Glu Val Leu Gln Leu Ala	Thr Leu Thr Arg Pro Gly Ala													
	3235												3240	
Glu Lys Thr Gly Tyr Arg Val Val Ser	Gly Asn Glu Gln Gly Arg Phe													
	3250												3255	
Arg Leu Asp Ala Arg Thr Gly Ile Leu	Tyr Val Asn Ala Ser Leu Asp													
	3265												3270	
Phe Glu Thr Ser Pro Lys Tyr Phe Leu	Ser Ile Glu Cys Ser Arg Lys													
	3285												3290	
Ser Ser Ser Ser Leu Ser Asp Val Thr	Thr Val Met Val Asn Ile Thr													
	3300												3305	
Asp Val Asn Glu His Arg Pro Gln Phe	Pro Gln Asp Pro Tyr Ser Thr													
	3315												3320	
Arg Val Leu Glu Asn Ala Leu Val Gly	Asp Val Ile Leu Thr Val Ser													
	3330												3335	
Ala Thr Asp Glu Asp Gly Pro Leu Asn	Ser Asp Ile Thr Tyr Ser Leu													



3345	3350	3355	3360
Ile Gly Gly Asn Gln Leu Gly His Phe Thr Ile His Pro Lys Lys Gly	3365	3370	3375
Glu Leu Gln Val Ala Lys Ala Leu Asp Arg Glu Gln Ala Ser Ser Tyr	3380	3385	3390
Ser Leu Lys Leu Arg Ala Thr Asp Ser Gly Gln Pro Pro Leu His Glu	3395	3400	3405
Asp Thr Asp Ile Ala Ile Gln Val Ala Asp Val Asn Asp Asn Pro Pro	3410	3415	3420
Arg Phe Phe Gln Leu Asn Tyr Ser Thr Thr Val Gln Glu Asn Ser Pro	3425	3430	3435
Ile Gly Ser Lys Val Leu Gln Leu Ile Leu Ser Asp Pro Asp Ser Pro	3445	3450	3455
Glu Asn Gly Pro Pro Tyr Ser Phe Arg Ile Thr Lys Gly Asn Asn Gly	3460	3465	3470
Ser Ala Phe Arg Val Thr Pro Asp Gly Trp Leu Val Thr Ala Glu Gly	3475	3480	3485
Leu Ser Arg Arg Ala Gln Glu Trp Tyr Gln Leu Gln Ile Gln Ala Ser	3490	3495	3500
Asp Ser Gly Ile Pro Pro Leu Ser Ser Leu Thr Ser Val Arg Val His	3505	3510	3515
Val Thr Glu Gln Ser His Tyr Ala Pro Ser Ala Leu Pro Leu Glu Ile	3525	3530	3535
Phe Ile Thr Val Gly Glu Asp Glu Phe Gln Gly Gly Met Val Gly Lys	3540	3545	3550
Ile His Ala Thr Asp Arg Asp Pro Gln Asp Thr Leu Thr Tyr Ser Leu	3555	3560	3565
Ala Glu Glu Glu Thr Leu Gly Arg His Phe Ser Val Gly Ala Pro Asp	3570	3575	3580
Gly Lys Ile Ile Ala Ala Gln Gly Leu Pro Arg Gly His Tyr Ser Phe	3585	3590	3595
Asn Val Thr Val Ser Asp Gly Thr Phe Thr Thr Thr Ala Gly Val His	3605	3610	3615
Val Tyr Val Trp His Val Gly Gln Glu Ala Leu Gln Gln Ala Met Trp	3620	3625	3630
Met Gly Phe Tyr Gln Leu Thr Pro Glu Glu Leu Val Ser Asp His Trp	3635	3640	3645
Arg Asn Leu Gln Arg Phe Leu Ser His Lys Leu Asp Ile Lys Arg Ala			

3650	3655	3660
Asn Ile His Leu Ala Ser Leu Gln Pro Ala Glu Ala Val Ala Gly Val 3665                      3670                      3675                      3680		
Asp Val Leu Leu Val Phe Glu Gly His Ser Gly Thr Phe Tyr Glu Phe 3685                      3690                      3695		
Gln Glu Leu Ala Ser Ile Ile Thr His Ser Ala Lys Glu Met Glu His 3700                      3705                      3710		
Ser Val Gly Val Gln, Met Arg Ser Ala Met Pro Met Val Pro Cys Gln 3715                      3720                      3725		
Gly Pro Thr Cys Gln Gly Gln Ile Cys His Asn Thr Val His Leu Asp 3730                      3735                      3740		
Pro Lys Val Gly Pro Thr Tyr Ser Thr Ala Arg Leu Ser Ile Leu Thr 3745                      3750                      3755                      3760		
Pro Arg His His Leu Gln Arg Ser Cys Ser Cys Asn Gly Thr Ala Thr 3765                      3770                      3775		
Arg Phe Ser Gly Gln Ser Tyr Val Arg Tyr Arg Ala Pro Ala Ala Arg 3780                      3785                      3790		
Asn Trp His Ile His Phe Tyr Leu Lys Thr Leu Gln Pro Gln Ala Ile 3795                      3800                      3805		
Leu Leu Phe Thr Asn Glu Thr Ala Ser Val Ser Leu Lys Leu Ala Ser 3810                      3815                      3820		
Gly Val Pro Gln Leu Glu Tyr His Cys Leu Gly Gly Phe Tyr Gly Asn 3825                      3830                      3835                      3840		
Leu Ser Ser Gln Arg His Val Asn Asp His Glu Trp His Ser Ile Leu 3845                      3850                      3855		
Val Glu Glu Met Asp Ala Ser Ile Arg Leu Met Val Asp Ser Met Gly 3860                      3865                      3870		
Asn Thr Ser Leu Val Val Pro Glu Asn Cys Arg Gly Leu Arg Pro Glu 3875                      3880                      3885		
Arg His Leu Leu Leu Gly Gly Leu Ile Leu Leu His Ser Ser Ser Asn 3890                      3895                      3900		
Val Ser Gln Gly Phe Glu Gly Cys Leu Asp Ala Val Val Val Asn Glu 3905                      3910                      3915                      3920		
Glu Ala Leu Asp Leu Leu Ala Pro Gly Lys Thr Val Ala Gly Leu Leu 3925                      3930                      3935		
Glu Thr Gln Ala Leu Thr Gln Cys Cys Leu His Ser Asp Tyr Cys Ser 3940                      3945                      3950		
Gln Asn Thr Cys Leu Asn Gly Gly Lys Cys Ser Trp Thr His Gly Ala		



4260	4265	4270
Ala Ile Ser Tyr Tyr His Ser Gln Phe Arg Gln Gly Gly Gly Gly Pro		
4275	4280	4285
Cys Leu Ala Asp Gly Gly Tyr Lys Gly Val Gly Met Arg Leu Ser Arg		
4290	4295	4300
Ala Gly Pro Ser Tyr Ala Val Cys Glu Val Glu Gly Ala Pro Leu Ala		
4305	4310	4315
Gly Gln Gly Gln Pro Arg Val Pro Pro Asn Tyr Glu Gly Ser Asp Met		
4325	4330	4335
Val Glu Ser Asp Tyr Gly Ser Cys Glu Glu Val Met Phe		
4340	4345	

<210> 19  
 <211> 4349  
 <212> PRT  
 <213> Homo sapiens

<400> 19																
Met	Thr	Ile	Ala	Leu	Leu	Gly	Phe	Ala	Ile	Phe	Leu	Leu	His	Cys	Ala	
1				5					10					15		
Thr	Cys	Glu	Lys	Pro	Leu	Glu	Gly	Ile	Leu	Ser	Ser	Ser	Ala	Trp	His	
			20					25						30		
Phe	Thr	His	Ser	His	Tyr	Asn	Ala	Thr	Ile	Tyr	Glu	Asn	Ser	Ser	Pro	
			35				40					45				
Lys	Thr	Tyr	Val	Glu	Ser	Phe	Glu	Lys	Met	Gly	Ile	Tyr	Leu	Ala	Glu	
			50				55				60					
Pro	Gln	Trp	Ala	Val	Arg	Tyr	Arg	Ile	Ile	Ser	Gly	Asp	Val	Ala	Asn	
65					70					75					80	
Val	Phe	Lys	Thr	Glu	Glu	Tyr	Val	Val	Gly	Asn	Phe	Cys	Phe	Leu	Arg	
				85					90						95	
Ile	Arg	Thr	Lys	Ser	Ser	Asn	Thr	Ala	Leu	Leu	Asn	Arg	Glu	Val	Arg	
			100					105					110			
Asp	Ser	Tyr	Thr	Leu	Ile	Ile	Gln	Ala	Thr	Glu	Lys	Thr	Leu	Glu	Leu	
			115				120					125				
Glu	Ala	Leu	Thr	Arg	Val	Val	Val	His	Ile	Leu	Asp	Gln	Asn	Asp	Leu	
			130				135				140					
Lys	Pro	Leu	Phe	Ser	Pro	Pro	Ser	Tyr	Arg	Val	Thr	Ile	Ser	Glu	Asp	
145					150					155					160	
Met	Pro	Leu	Lys	Ser	Pro	Ile	Cys	Lys	Val	Thr	Ala	Thr	Asp	Ala	Asp	
				165					170						175	

Leu Gly Gln Asn Ala Glu Phe Tyr Tyr Ala Phe Asn Thr Arg Ser Glu  
 180 185 190  
 Met Phe Ala Ile His Pro Thr Ser Gly Val Val Thr Val Ala Gly Lys  
 195 200 205  
 Leu Asn Val Thr Trp Arg Gly Lys His Glu Leu Gln Val Leu Ala Val  
 210 215 220  
 Asp Arg Met Arg Lys Ile Ser Glu Gly Asn Gly Phe Gly Ser Leu Ala  
 225 230 235 240  
 Ala Leu Val Val His Val Glu Pro Ala Leu Arg Lys Pro Pro Ala Ile  
 245 250 255  
 Ala Ser Val Val Val Thr Pro Pro Asp Ser Asn Asp Gly Thr Thr Tyr  
 260 265 270  
 Ala Thr Val Leu Val Asp Ala Asn Ser Ser Gly Ala Glu Val Glu Ser  
 275 280 285  
 Val Glu Val Val Gly Gly Asp Pro Gly Lys His Phe Lys Ala Ile Lys  
 290 295 300  
 Ser Tyr Ala Arg Ser Asn Glu Phe Ser Leu Val Ser Val Lys Asp Ile  
 305 310 315 320  
 Asn Trp Met Glu Tyr Leu His Gly Phe Asn Leu Ser Leu Gln Ala Arg  
 325 330 335  
 Ser Gly Ser Gly Pro Tyr Phe Tyr Ser Gln Ile Arg Gly Phe His Leu  
 340 345 350  
 Pro Pro Ser Lys Leu Ser Ser Leu Lys Phe Glu Lys Ala Val Tyr Arg  
 355 360 365  
 Val Gln Leu Ser Glu Phe Ser Pro Pro Gly Ser Arg Val Val Met Val  
 370 375 380  
 Arg Val Thr Pro Ala Phe Pro Asn Leu Gln Tyr Val Leu Lys Pro Ser  
 385 390 395 400  
 Ser Glu Asn Val Gly Phe Lys Leu Asn Ala Arg Thr Gly Leu Ile Thr  
 405 410 415  
 Thr Thr Lys Leu Met Asp Phe His Asp Arg Ala His Tyr Gln Leu His  
 420 425 430  
 Ile Arg Thr Ser Pro Gly Gln Ala Ser Thr Val Val Val Ile Asp Ile  
 435 440 445  
 Val Asp Cys Asn Asn His Ala Pro Leu Phe Asn Arg Ser Ser Tyr Asp  
 450 455 460  
 Gly Thr Leu Asp Glu Asn Ile Pro Pro Gly Thr Ser Val Leu Ala Val  
 465 470 475 480

Thr Ala Thr Asp Arg Asp His Gly Glu Asn Gly Tyr Val Thr Tyr Ser  
 485 490 495  
 Ile Ala Gly Pro Lys Ala Leu Pro Phe Ser Ile Asp Pro Tyr Leu Gly  
 500 505 510  
 Ile Ile Ser Thr Ser Lys Pro Met Asp Tyr Glu Leu Met Lys Arg Ile  
 515 520 525  
 Tyr Thr Phe Arg Val Arg Ala Ser Asp Trp Gly Ser Pro Phe Arg Arg  
 530 535 540  
 Glu Lys Glu Val Ser Ile Phe Leu Gln Leu Arg Asn Leu Asn Asp Asn  
 545 550 555 560  
 Gln Pro Met Phe Glu Glu Val Asn Cys Thr Gly Ser Ile Arg Gln Asp  
 565 570 575  
 Trp Pro Val Gly Lys Ser Ile Met Thr Met Ser Ala Ile Asp Val Asp  
 580 585 590  
 Glu Leu Gln Asn Leu Lys Tyr Glu Ile Val Ser Gly Asn Glu Leu Glu  
 595 600 605  
 Tyr Phe Asp Leu Asn His Phe Ser Gly Val Ile Ser Leu Lys Arg Pro  
 610 615 620  
 Phe Ile Asn Leu Thr Ala Gly Gln Pro Thr Ser Tyr Ser Leu Lys Ile  
 625 630 635 640  
 Thr Ala Ser Asp Gly Lys Asn Tyr Ala Ser Pro Thr Thr Leu Asn Ile  
 645 650 655  
 Thr Val Val Lys Asp Pro His Phe Glu Val Pro Val Thr Cys Asp Lys  
 660 665 670  
 Thr Gly Val Leu Thr Gln Phe Thr Lys Thr Ile Leu His Phe Ile Gly  
 675 680 685  
 Leu Gln Asn Gln Glu Ser Ser Asp Glu Glu Phe Thr Ser Leu Ser Thr  
 690 695 700  
 Tyr Gln Ile Asn His Tyr Thr Pro Gln Phe Glu Asp His Phe Pro Gln  
 705 710 715 720  
 Ser Ile Asp Val Leu Glu Ser Val Pro Ile Asn Thr Pro Leu Ala Arg  
 725 730 735  
 Leu Ala Ala Thr Asp Pro Asp Ala Gly Phe Asn Gly Lys Leu Val Tyr  
 740 745 750  
 Val Ile Ala Asp Gly Asn Glu Glu Gly Cys Phe Asp Ile Glu Leu Glu  
 755 760 765  
 Thr Gly Leu Leu Thr Val Ala Ala Pro Leu Asp Tyr Glu Ala Thr Asn  
 770 775 780

Phe	Tyr	Ile	Leu	Asn	Val	Thr	Val	Tyr	Asp	Leu	Gly	Thr	Pro	Gln	Lys	
785					790					795					800	
Ser	Ser	Trp	Lys	Leu	Leu	Thr	Val	Asn	Val	Lys	Asp	Trp	Asn	Asp	Asn	
			805						810					815		
Ala	Pro	Arg	Phe	Pro	Pro	Gly	Gly	Tyr	Gln	Leu	Thr	Ile	Ser	Glu	Asp	
			820					825					830			
Thr	Glu	Val	Gly	Thr	Thr	Ile	Ala	Glu	Leu	Thr	Thr	Lys	Asp	Ala	Asp	
		835					840					845				
Ser	Glu	Asp	Asn	Gly	Arg	Val	Arg	Tyr	Thr	Leu	Leu	Ser	Pro	Thr	Glu	
	850					855					860					
Lys	Phe	Ser	Leu	His	Pro	Leu	Thr	Gly	Glu	Leu	Val	Val	Thr	Gly	His	
865					870					875					880	
Leu	Asp	Arg	Glu	Ser	Glu	Pro	Arg	Tyr	Ile	Leu	Lys	Val	Glu	Ala	Arg	
				885					890					895		
Asp	Gln	Pro	Ser	Lys	Gly	His	Gln	Leu	Phe	Ser	Val	Thr	Asp	Leu	Ile	
		900						905					910			
Ile	Thr	Leu	Glu	Asp	Val	Asn	Asp	Asn	Ser	Pro	Gln	Cys	Ile	Thr	Glu	
		915					920					925				
His	Asn	Arg	Leu	Lys	Val	Pro	Glu	Asp	Leu	Pro	Pro	Gly	Thr	Val	Leu	
	930					935					940					
Thr	Phe	Leu	Asp	Ala	Ser	Asp	Pro	Asp	Leu	Gly	Pro	Ala	Gly	Glu	Val	
945					950					955					960	
Arg	Tyr	Val	Leu	Met	Asp	Gly	Ala	His	Gly	Thr	Phe	Arg	Val	Asp	Leu	
				965					970					975		
Met	Thr	Gly	Ala	Leu	Ile	Leu	Glu	Arg	Glu	Leu	Asp	Phe	Glu	Arg	Arg	
			980					985					990			
Ala	Gly	Tyr	Asn	Leu	Ser	Leu	Trp	Ala	Ser	Asp	Gly	Gly	Arg	Pro	Leu	
		995					1000					1005				
Ala	Arg	Arg	Thr	Leu	Cys	His	Val	Glu	Val	Ile	Val	Leu	Asp	Val	Asn	
	1010					1015					1020					
Glu	Asn	Leu	His	Pro	Pro	His	Phe	Ala	Ser	Phe	Val	His	Gln	Gly	Gln	
1025				1030						1035					1040	
Val	Gln	Glu	Asn	Ser	Pro	Ser	Gly	Thr	Gln	Val	Ile	Val	Val	Ala	Ala	
			1045					1050					1055			
Gln	Asp	Asp	Asp	Ser	Gly	Leu	Asp	Gly	Glu	Leu	Gln	Tyr	Phe	Leu	Arg	
		1060						1065					1070			
Ala	Gly	Thr	Gly	Leu	Ala	Ala	Phe	Ser	Ile	Asn	Gln	Asp	Thr	Gly	Met	
	1075						1080					1085				

Ile Gln Thr Leu Ala Pro Leu Asp Arg Glu Phe Ala Ser Tyr Tyr Trp  
 1090 1095 1100

Leu Thr Val Leu Ala Val Asp Arg Gly Ser Val Pro Leu Ser Ser Val  
 1105 1110 1115 1120

Thr Glu Val Tyr Ile Glu Val Thr Asp Ala Asn Asp Asn Pro Pro Gln  
 1125 1130 1135

Met Ser Gln Ala Val Phe Tyr Pro Ser Ile Gln Glu Asp Ala Pro Val  
 1140 1145 1150

Gly Thr Ser Val Leu Gln Leu Asp Ala Trp Asp Pro Asp Ser Ser Ser  
 1155 1160 1165

Lys Gly Lys Leu Thr Phe Asn Ile Thr Ser Gly Asn Tyr Met Gly Phe  
 1170 1175 1180

Phe Met Ile His Pro Val Thr Gly Leu Leu Ser Thr Ala Gln Gln Leu  
 1185 1190 1195 1200

Asp Arg Glu Asn Lys Asp Glu His Ile Leu Glu Val Thr Val Leu Asp  
 1205 1210 1215

Asn Gly Glu Pro Ser Leu Lys Ser Thr Ser Arg Val Val Val Gly Ile  
 1220 1225 1230

Leu Asp Val Asn Asp Asn Pro Pro Ile Phe Ser His Lys Leu Phe Asn  
 1235 1240 1245

Val Arg Leu Pro Glu Arg Leu Ser Pro Val Ser Pro Gly Pro Val Tyr  
 1250 1255 1260

Arg Leu Val Ala Ser Asp Leu Asp Glu Gly Leu Asn Gly Arg Val Thr  
 1265 1270 1275 1280

Tyr Ser Ile Glu Asp Ser Tyr Glu Glu Ala Phe Ser Ile Asp Leu Val  
 1285 1290 1295

Thr Gly Val Val Ser Ser Asn Ser Thr Phe Thr Ala Gly Glu Tyr Asn  
 1300 1305 1310

Ile Leu Thr Ile Lys Ala Thr Asp Ser Gly Gln Pro Pro Leu Ser Ala  
 1315 1320 1325

Ser Val Arg Leu His Ile Glu Trp Ile Pro Trp Pro Arg Pro Ser Ser  
 1330 1335 1340

Ile Pro Leu Ala Phe Asp Glu Thr Tyr Tyr Ser Phe Thr Val Met Glu  
 1345 1350 1355 1360

Thr Asp Pro Val Asn His Met Val Gly Val Ile Ser Val Glu Gly Arg  
 1365 1370 1375

Pro Gly Leu Phe Trp Phe Asn Ile Ser Gly Gly Asp Lys Asp Met Asp  
 1380 1385 1390



Phe Asp Ile Glu Lys Thr Thr Gly Ser Ile Val Ile Ala Arg Pro Leu  
 1395 1400 1405

Asp Thr Arg Arg Arg Ser Asn Tyr Asn Leu Thr Val Glu Val Thr Asp  
 1410 1415 1420

Gly Ser Arg Thr Ile Ala Thr Gln Val His Ile Phe Met Ile Ala Asn  
 1425 1430 1435 1440

Ile Asn His His Arg Pro Gln Phe Leu Glu Thr Arg Tyr Glu Val Arg  
 1445 1450 1455

Val Pro Gln Asp Thr Val Pro Gly Val Glu Leu Leu Arg Val Gln Ala  
 1460 1465 1470

Ile Asp Gln Asp Lys Gly Lys Ser Leu Ile Tyr Thr Ile His Gly Ser  
 1475 1480 1485

Gln Asp Pro Gly Ser Ala Ser Leu Phe Gln Leu Asp Pro Ser Ser Gly  
 1490 1495 1500

Val Leu Val Thr Val Gly Lys Leu Asp Leu Gly Ser Gly Pro Ser Gln  
 1505 1510 1515 1520

His Thr Leu Thr Val Met Val Arg Asp Gln Glu Ile Pro Ile Lys Arg  
 1525 1530 1535

Asn Phe Val Trp Val Thr Ile His Val Glu Asp Gly Asn Leu His Pro  
 1540 1545 1550

Pro Arg Phe Thr Gln Leu His Tyr Glu Ala Ser Val Pro Asp Thr Ile  
 1555 1560 1565

Ala Pro Gly Thr Glu Leu Leu Gln Val Arg Ala Met Asp Ala Asp Arg  
 1570 1575 1580

Gly Val Asn Ala Glu Val His Tyr Ser Leu Leu Lys Gly Asn Ser Glu  
 1585 1590 1595 1600

Gly Phe Phe Asn Ile Asn Ala Leu Leu Gly Ile Ile Thr Leu Ala Gln  
 1605 1610 1615

Lys Leu Asp Gln Ala Asn His Ala Pro His Thr Leu Thr Val Lys Ala  
 1620 1625 1630

Glu Asp Gln Gly Ser Pro Gln Trp His Asp Leu Ala Thr Val Ile Ile  
 1635 1640 1645

His Val Tyr Pro Ser Asp Arg Ser Ala Pro Ile Phe Ser Lys Ser Glu  
 1650 1655 1660

Tyr Phe Val Glu Ile Pro Glu Ser Ile Pro Val Gly Ser Pro Ile Leu  
 1665 1670 1675 1680

Leu Val Ser Ala Met Ser Pro Ser Glu Val Thr Tyr Glu Leu Arg Glu  
 1685 1690 1695

Gly Asn Lys Asp Gly Val Phe Ser Met Asn Ser Tyr Ser Gly Leu Ile  
 1700 1705 1710  
 Ser Thr Gln Lys Lys Leu Asp His Glu Lys Ile Ser Ser Tyr Gln Leu  
 1715 1720 1725  
 Lys Ile Arg Gly Ser Asn Met Ala Gly Ala Phe Thr Asp Val Met Val  
 1730 1735 1740  
 Val Val Asp Ile Ile Asp Glu Asn Asp Asn Ala Pro Met Phe Leu Lys  
 1745 1750 1755 1760  
 Ser Thr Phe Val Gly Gln Ile Ser Glu Ala Ala Pro Leu Tyr Ser Met  
 1765 1770 1775  
 Ile Met Asp Lys Asn Asn Asn Pro Phe Val Ile His Ala Ser Asp Ser  
 1780 1785 1790  
 Asp Lys Glu Ala Asn Ser Leu Leu Val Tyr Lys Ile Leu Glu Pro Glu  
 1795 1800 1805  
 Ala Leu Lys Phe Phe Lys Ile Asp Pro Ser Met Gly Thr Leu Thr Ile  
 1810 1815 1820  
 Val Ser Glu Met Asp Tyr Glu Ser Met Pro Ser Phe Gln Phe Cys Val  
 1825 1830 1835 1840  
 Tyr Val His Asp Gln Gly Ser Pro Val Leu Phe Ala Pro Arg Pro Ala  
 1845 1850 1855  
 Gln Val Ile Ile His Val Arg Asp Val Asn Asp Ser Pro Pro Arg Phe  
 1860 1865 1870  
 Ser Glu Gln Ile Tyr Glu Val Ala Ile Val Gly Pro Ile His Pro Gly  
 1875 1880 1885  
 Met Glu Leu Leu Met Val Arg Ala Ser Asp Glu Asp Ser Glu Val Asn  
 1890 1895 1900  
 Tyr Ser Ile Lys Thr Gly Asn Ala Asp Glu Ala Val Thr Ile His Pro  
 1905 1910 1915 1920  
 Val Thr Gly Ser Ile Ser Val Leu Asn Pro Ala Phe Leu Gly Leu Ser  
 1925 1930 1935  
 Arg Lys Leu Thr Ile Arg Ala Ser Asp Gly Leu Tyr Gln Asp Thr Ala  
 1940 1945 1950  
 Leu Val Lys Ile Ser Leu Thr Gln Val Leu Asp Lys Ser Leu Gln Phe  
 1955 1960 1965  
 Asp Gln Asp Val Tyr Trp Ala Ala Val Lys Glu Asn Leu Gln Asp Arg  
 1970 1975 1980  
 Lys Ala Leu Val Ile Leu Gly Ala Gln Gly Asn His Leu Asn Asp Thr  
 1985 1990 1995 2000

Leu Ser Tyr Phe Leu Leu Asn Gly Thr Asp Met Phe His Met Val Gln  
 2005 2010 2015  
 Ser Ala Gly Val Leu Gln Thr Arg Gly Val Ala Phe Asp Arg Glu Gln  
 2020 2025 2030  
 Gln Asp Thr His Glu Leu Ala Val Glu Val Arg Asp Asn Arg Thr Pro  
 2035 2040 2045  
 Gln Arg Val Ala Gln Gly Leu Val Arg Val Ser Ile Glu Asp Val Asn  
 2050 2055 2060  
 Asp Asn Pro Pro Lys Phe Lys His Leu Pro Tyr Tyr Thr Ile Ile Gln  
 2065 2070 2075 2080  
 Asp Gly Thr Glu Pro Gly Asp Val Leu Phe Gln Val Ser Ala Thr Asp  
 2085 2090 2095  
 Glu Asp Leu Gly Thr Asn Gly Ala Val Thr Tyr Glu Phe Ala Glu Asp  
 2100 2105 2110  
 Tyr Thr Tyr Phe Arg Ile Asp Pro Tyr Leu Gly Asp Ile Ser Leu Lys  
 2115 2120 2125  
 Lys Pro Phe Asp Tyr Gln Ala Leu Asn Lys Tyr His Leu Lys Val Ile  
 2130 2135 2140  
 Ala Arg Asp Gly Gly Thr Pro Ser Leu Gln Ser Glu Glu Glu Val Leu  
 2145 2150 2155 2160  
 Val Thr Val Arg Asn Lys Ser Asn Pro Leu Phe Gln Ser Pro Tyr Tyr  
 2165 2170 2175  
 Lys Val Arg Val Pro Glu Asn Ile Thr Leu Tyr Thr Pro Ile Leu His  
 2180 2185 2190  
 Thr Gln Ala Arg Ser Pro Glu Gly Leu Arg Leu Ile Tyr Asn Ile Val  
 2195 2200 2205  
 Glu Glu Glu Pro Leu Met Leu Phe Thr Thr Asp Phe Lys Thr Gly Val  
 2210 2215 2220  
 Leu Thr Val Thr Gly Pro Leu Asp Tyr Glu Ser Lys Thr Lys His Val  
 2225 2230 2235 2240  
 Phe Thr Val Arg Ala Thr Asp Thr Ala Leu Gly Ser Phe Ser Glu Ala  
 2245 2250 2255  
 Thr Val Glu Val Leu Val Glu Asp Val Asn Asp Asn Pro Pro Thr Phe  
 2260 2265 2270  
 Ser Gln Leu Val Tyr Thr Thr Ser Ile Ser Glu Gly Leu Pro Ala Gln  
 2275 2280 2285  
 Thr Pro Val Ile Gln Leu Leu Ala Ser Asp Gln Asp Ser Gly Arg Asn  
 2290 2295 2300

Arg Asp Val Ser Tyr Gln Ile Val Glu Asp Gly Ser Asp Val Ser Lys  
 2305                      2310                      2315                      2320

Phe Phe Gln Ile Asn Gly Ser Thr Gly Glu Met Ser Thr Val Gln Glu  
                     2325                      2330                      2335

Leu Asp Tyr Glu Ala Gln Gln His Phe His Val Lys Val Arg Ala Met  
                     2340                      2345                      2350

Asp Lys Gly Asp Pro Pro Leu Thr Gly Glu Thr Leu Val Val Val Asn  
                     2355                      2360                      2365

Val Ser Asp Ile Asn Asp Asn Pro Pro Glu Phe Arg Gln Pro Gln Tyr  
                     2370                      2375                      2380

Glu Ala Asn Val Ser Glu Leu Ala Thr Cys Gly His Leu Val Leu Lys  
 2385                      2390                      2395                      2400

Val Gln Ala Ile Asp Pro Asp Ser Arg Asp Thr Ser Arg Leu Glu Tyr  
                     2405                      2410                      2415

Leu Ile Leu Ser Gly Asn Gln Asp Arg His Phe Phe Ile Asn Ser Ser  
                     2420                      2425                      2430

Ser Gly Ile Ile Ser Met Phe Asn Leu Cys Lys Lys His Leu Asp Ser  
                     2435                      2440                      2445

Ser Tyr Asn Leu Arg Val Gly Ala Ser Asp Gly Val Phe Arg Ala Thr  
                     2450                      2455                      2460

Val Pro Val Tyr Ile Asn Thr Thr Asn Ala Asn Lys Tyr Ser Pro Glu  
 2465                      2470                      2475                      2480

Phe Gln Gln His Leu Tyr Glu Ala Glu Leu Ala Glu Asn Ala Met Val  
                     2485                      2490                      2495

Gly Thr Lys Val Ile Asp Leu Leu Ala Ile Asp Lys Asp Ser Gly Pro  
                     2500                      2505                      2510

Tyr Gly Thr Ile Asp Tyr Thr Ile Ile Asn Lys Leu Ala Ser Glu Lys  
                     2515                      2520                      2525

Phe Ser Ile Asn Pro Asn Gly Gln Ile Ala Thr Leu Gln Lys Leu Asp  
                     2530                      2535                      2540

Arg Glu Asn Ser Thr Glu Arg Val Ile Ala Ile Lys Val Met Ala Arg  
 2545                      2550                      2555                      2560

Asp Gly Gly Gly Arg Val Ala Phe Cys Thr Val Lys Ile Ile Leu Thr  
                     2565                      2570                      2575

Asp Glu Asn Asp Asn Pro Pro Gln Phe Lys Ala Ser Glu Tyr Thr Val  
                     2580                      2585                      2590

Ser Ile Gln Ser Asn Val Ser Lys Asp Ser Pro Val Ile Gln Val Leu  
                     2595                      2600                      2605

Ala Tyr Asp Ala Asp Glu Gly Gln Asn Ala Asp Val Thr Tyr Ser Val  
 2610 2615 2620

Asn Pro Glu Asp Leu Val Lys Asp Val Ile Glu Ile Asn Pro Val Thr  
 2625 2630 2635 2640

Gly Val Val Lys Val Lys Asp Ser Leu Val Gly Leu Glu Asn Gln Thr  
 2645 2650 2655

Leu Asp Phe Phe Ile Lys Ala Gln Asp Gly Gly Pro Pro His Trp Asn  
 2660 2665 2670

Ser Leu Val Pro Val Arg Leu Gln Val Val Pro Lys Lys Val Ser Leu  
 2675 2680 2685

Pro Lys Phe Ser Glu Pro Leu Tyr Thr Phe Ser Ala Pro Glu Asp Leu  
 2690 2695 2700

Pro Glu Gly Ser Glu Ile Gly Ile Val Lys Ala Val Ala Ala Gln Asp  
 2705 2710 2715 2720

Pro Val Ile Tyr Ser Leu Val Arg Gly Thr Thr Pro Glu Ser Asn Lys  
 2725 2730 2735

Asp Gly Val Phe Ser Leu Asp Pro Asp Thr Gly Val Ile Lys Val Arg  
 2740 2745 2750

Lys Pro Met Asp His Glu Ser Thr Lys Leu Tyr Gln Ile Asp Val Met  
 2755 2760 2765

Ala His Cys Leu Gln Asn Thr Asp Val Val Ser Leu Val Ser Val Asn  
 2770 2775 2780

Ile Gln Val Gly Asp Val Asn Asp Asn Arg Pro Val Phe Glu Ala Asp  
 2785 2790 2795 2800

Pro Tyr Lys Ala Val Leu Thr Glu Asn Met Pro Val Gly Thr Ser Val  
 2805 2810 2815

Ile Gln Val Thr Ala Ile Asp Lys Asp Thr Gly Arg Asp Gly Gln Val  
 2820 2825 2830

Ser Tyr Arg Leu Ser Ala Asp Pro Gly Ser Asn Val His Glu Leu Phe  
 2835 2840 2845

Ala Ile Asp Ser Glu Ser Gly Trp Ile Thr Thr Leu Gln Glu Leu Asp  
 2850 2855 2860

Cys Glu Thr Cys Gln Thr Tyr His Phe His Val Val Ala Tyr Asp His  
 2865 2870 2875 2880

Gly Gln Thr Ile Gln Leu Ser Ser Gln Ala Leu Val Gln Val Ser Ile  
 2885 2890 2895

Thr Asp Glu Asn Asp Asn Ala Pro Arg Phe Ala Ser Glu Glu Tyr Arg  
 2900 2905 2910

Gly Ser Val Val Glu Asn Ser Glu Pro Gly Glu Leu Val Ala Thr Leu  
 2915 2920 2925  
 Lys Thr Leu Asp Ala Asp Ile Ser Glu Gln Asn Arg Gln Val Thr Cys  
 2930 2935 2940  
 Tyr Ile Thr Glu Gly Asp Pro Leu Gly Gln Phe Gly Ile Ser Gln Val  
 2945 2950 2955 2960  
 Gly Asp Glu Trp Arg Ile Ser Ser Arg Lys Thr Leu Asp Arg Glu His  
 2965 2970 2975  
 Thr Ala Lys Tyr Leu Leu Arg Val Thr Ala Ser Asp Gly Lys Phe Gln  
 2980 2985 2990  
 Ala Ser Val Thr Val Glu Ile Phe Val Leu Asp Val Asn Asp Asn Ser  
 2995 3000 3005  
 Pro Gln Cys Ser Gln Leu Leu Tyr Thr Gly Lys Val His Glu Asp Val  
 3010 3015 3020  
 Phe Pro Gly His Phe Ile Leu Lys Val Ser Ala Thr Asp Leu Asp Thr  
 3025 3030 3035 3040  
 Asp Thr Asn Ala Gln Ile Thr Tyr Ser Leu His Gly Pro Gly Ala His  
 3045 3050 3055  
 Glu Phe Lys Leu Asp Pro His Thr Gly Glu Leu Thr Thr Leu Thr Ala  
 3060 3065 3070  
 Leu Asp Arg Glu Arg Lys Asp Val Phe Asn Leu Val Ala Lys Ala Thr  
 3075 3080 3085  
 Asp Gly Gly Gly Arg Ser Cys Gln Ala Asp Ile Thr Leu His Val Glu  
 3090 3095 3100  
 Asp Val Asn Asp Asn Ala Pro Arg Phe Phe Pro Ser His Cys Ala Val  
 3105 3110 3115 3120  
 Ala Val Phe Asp Asn Thr Thr Val Lys Thr Pro Val Ala Val Val Phe  
 3125 3130 3135  
 Ala Arg Asp Pro Asp Gln Gly Ala Asn Ala Gln Val Val Tyr Ser Leu  
 3140 3145 3150  
 Pro Asp Ser Ala Glu Gly His Phe Ser Ile Asp Ala Thr Thr Gly Val  
 3155 3160 3165  
 Ile Arg Leu Glu Lys Pro Leu Gln Val Arg Pro Gln Ala Pro Leu Glu  
 3170 3175 3180  
 Leu Thr Val Arg Ala Ser Asp Leu Gly Thr Pro Ile Pro Leu Ser Thr  
 3185 3190 3195 3200  
 Leu Gly Thr Val Thr Val Ser Val Val Gly Leu Glu Asp Tyr Leu Pro  
 3205 3210 3215

Val Phe Leu Asn Thr Glu His Ser Val Gln Val Pro Glu Asp Ala Pro  
 3220 3225 3230  
 Pro Gly Thr Glu Val Leu Gln Leu Ala Thr Leu Thr Arg Pro Gly Ala  
 3235 3240 3245  
 Glu Lys Thr Gly Tyr Arg Val Val Ser Gly Asn Glu Gln Gly Arg Phe  
 3250 3255 3260  
 Arg Leu Asp Ala Arg Thr Gly Ile Leu Tyr Val Asn Ala Ser Leu Asp  
 3265 3270 3275 3280  
 Phe Glu Thr Ser Pro Lys Tyr Phe Leu Ser Ile Glu Cys Ser Arg Lys  
 3285 3290 3295  
 Ser Ser Ser Ser Leu Ser Asp Val Thr Thr Val Met Val Asn Ile Thr  
 3300 3305 3310  
 Asp Val Asn Glu His Arg Pro Gln Phe Pro Gln Asp Pro Tyr Ser Thr  
 3315 3320 3325  
 Arg Val Leu Glu Asn Ala Leu Val Gly Asp Val Ile Leu Thr Val Ser  
 3330 3335 3340  
 Ala Thr Asp Glu Asp Gly Pro Leu Asn Ser Asp Ile Thr Tyr Ser Leu  
 3345 3350 3355 3360  
 Ile Gly Gly Asn Gln Leu Gly His Phe Thr Ile His Pro Lys Lys Gly  
 3365 3370 3375  
 Glu Leu Gln Val Ala Lys Ala Leu Asp Arg Glu Gln Ala Ser Ser Tyr  
 3380 3385 3390  
 Ser Leu Lys Leu Arg Ala Thr Asp Ser Gly Gln Pro Pro Leu His Glu  
 3395 3400 3405  
 Asp Thr Asp Ile Ala Ile Gln Val Ala Asp Val Asn Asp Asn Pro Pro  
 3410 3415 3420  
 Arg Phe Phe Gln Leu Asn Tyr Ser Thr Thr Val Gln Glu Asn Ser Pro  
 3425 3430 3435 3440  
 Ile Gly Ser Lys Val Leu Gln Leu Ile Leu Ser Asp Pro Asp Ser Pro  
 3445 3450 3455  
 Glu Asn Gly Pro Pro Tyr Ser Phe Arg Ile Thr Lys Gly Asn Asn Gly  
 3460 3465 3470  
 Ser Ala Phe Arg Val Thr Pro Asp Gly Trp Leu Val Thr Ala Glu Gly  
 3475 3480 3485  
 Leu Ser Arg Arg Ala Gln Glu Trp Tyr Gln Leu Gln Ile Gln Ala Ser  
 3490 3495 3500  
 Asp Ser Gly Ile Pro Pro Leu Ser Ser Leu Thr Ser Val Arg Val His  
 3505 3510 3515 3520

Val Thr Glu Gln Ser His Tyr Ala Pro Ser Ala Leu Pro Leu Glu Ile  
 3525 3530 3535

Phe Ile Thr Val Gly Glu Asp Glu Phe Gln Gly Gly Met Val Gly Lys  
 3540 3545 3550

Ile His Ala Thr Asp Arg Asp Pro Gln Asp Thr Leu Thr Tyr Ser Leu  
 3555 3560 3565

Ala Glu Glu Glu Thr Leu Gly Arg His Phe Ser Val Gly Ala Pro Asp  
 3570 3575 3580

Gly Lys Ile Ile Ala Ala Gln Gly Leu Pro Arg Gly His Tyr Ser Phe  
 3585 3590 3595 3600

Asn Val Thr Val Ser Asp Gly Thr Phe Thr Thr Thr Ala Gly Val His  
 3605 3610 3615

Val Tyr Val Trp His Val Gly Gln Glu Ala Leu Gln Gln Ala Met Trp  
 3620 3625 3630

Met Gly Phe Tyr Gln Leu Thr Pro Glu Glu Leu Val Ser Asp His Trp  
 3635 3640 3645

Arg Asn Leu Gln Arg Phe Leu Ser His Lys Leu Asp Ile Lys Arg Ala  
 3650 3655 3660

Asn Ile His Leu Ala Ser Leu Gln Pro Ala Glu Ala Val Ala Gly Val  
 3665 3670 3675 3680

Asp Val Leu Leu Val Phe Glu Gly His Ser Gly Thr Phe Tyr Glu Phe  
 3685 3690 3695

Gln Glu Leu Ala Ser Ile Ile Thr His Ser Ala Lys Glu Met Glu His  
 3700 3705 3710

Ser Val Gly Val Gln Met Arg Ser Ala Met Pro Met Val Pro Cys Gln  
 3715 3720 3725

Gly Pro Thr Cys Gln Gly Gln Ile Cys His Asn Thr Val His Leu Asp  
 3730 3735 3740

Pro Lys Val Gly Pro Thr Tyr Ser Thr Ala Arg Leu Ser Ile Leu Thr  
 3745 3750 3755 3760

Pro Arg His His Leu Gln Arg Ser Cys Ser Cys Asn Gly Thr Ala Thr  
 3765 3770 3775

Arg Phe Ser Gly Gln Ser Tyr Val Arg Tyr Arg Ala Pro Ala Ala Arg  
 3780 3785 3790

Asn Trp His Ile His Phe Tyr Leu Lys Thr Leu Gln Pro Gln Ala Ile  
 3795 3800 3805

Leu Leu Phe Thr Asn Glu Thr Ala Ser Val Ser Leu Lys Leu Ala Ser  
 3810 3815 3820



Gly Val Pro Gln Leu Glu Tyr His Cys Leu Gly Gly Phe Tyr Gly Asn  
 3825                      3830                      3835                      3840

Leu Ser Ser Gln Arg His Val Asn Asp His Glu Trp His Ser Ile Leu  
                     3845                      3850                      3855

Val Glu Glu Met Asp Ala Ser Ile Arg Leu Met Val Asp Ser Met Gly  
                     3860                      3865                      3870

Asn Thr Ser Leu Val Val Pro Glu Asn Cys Arg Gly Leu Arg Pro Glu  
                     3875                      3880                      3885

Arg His Leu Leu Leu Gly Gly Leu Ile Leu Leu His Ser Ser Ser Asn  
                     3890                      3895                      3900

Val Ser Gln Gly Phe Glu Gly Cys Leu Asp Ala Val Val Val Asn Glu  
 3905                      3910                      3915                      3920

Glu Ala Leu Asp Leu Leu Ala Pro Gly Lys Thr Val Ala Gly Leu Leu  
                     3925                      3930                      3935

Glu Thr Gln Ala Leu Thr Gln Cys Cys Leu His Ser Asp Tyr Cys Ser  
                     3940                      3945                      3950

Gln Asn Thr Cys Leu Asn Gly Gly Lys Cys Ser Trp Thr His Gly Ala  
                     3955                      3960                      3965

Gly Tyr Val Cys Lys Cys Pro Pro Gln Phe Ser Gly Lys His Cys Glu  
                     3970                      3975                      3980

Gln Gly Arg Glu Asn Cys Thr Phe Ala Pro Cys Leu Glu Gly Gly Thr  
 3985                      3990                      3995                      4000

Cys Ile Leu Ser Pro Lys Gly Ala Ser Cys Asn Cys Pro His Pro Tyr  
                     4005                      4010                      4015

Thr Gly Asp Arg Cys Glu Met Glu Ala Arg Gly Cys Ser Glu Gly His  
                     4020                      4025                      4030

Cys Leu Val Thr Pro Glu Ile Gln Arg Gly Asp Trp Gly Gln Gln Glu  
                     4035                      4040                      4045

Leu Leu Ile Ile Thr Val Ala Val Ala Phe Ile Ile Ile Ser Thr Val  
                     4050                      4055                      4060

Gly Leu Leu Phe Tyr Cys Arg Arg Cys Lys Ser His Lys Pro Val Ala  
 4065                      4070                      4075                      4080

Met Glu Asp Pro Asp Leu Leu Ala Arg Ser Val Gly Val Asp Thr Gln  
                     4085                      4090                      4095

Ala Met Pro Ala Ile Glu Leu Asn Pro Leu Ser Ala Ser Ser Cys Asn  
                     4100                      4105                      4110

Asn Leu Asn Gln Pro Glu Pro Ser Lys Ala Ser Val Pro Asn Glu Leu  
                     4115                      4120                      4125

Val Thr Phe Gly Pro Asn Ser Lys Gln Arg Pro Val Val Cys Ser Val  
 4130 4135 4140

Pro Pro Arg Leu Pro Pro Ala Ala Val Pro Ser His Ser Asp Asn Glu  
 4145 4150 4155 4160

Pro Val Ile Lys Arg Thr Trp Ser Ser Glu Glu Met Val Tyr Pro Gly  
 4165 4170 4175

Gly Ala Met Val Trp Pro Pro Thr Tyr Ser Arg Asn Glu Arg Trp Glu  
 4180 4185 4190

Tyr Pro His Ser Glu Val Thr Gln Gly Pro Leu Pro Pro Ser Ala His  
 4195 4200 4205

Arg His Ser Thr Pro Val Val Met Pro Glu Pro Asn Gly Leu Tyr Gly  
 4210 4215 4220

Gly Phe Pro Phe Pro Leu Glu Met Glu Asn Lys Arg Ala Pro Leu Pro  
 4225 4230 4235 4240

Pro Arg Tyr Ser Asn Gln Asn Leu Glu Asp Leu Met Pro Ser Arg Pro  
 4245 4250 4255

Pro Ser Pro Arg Glu Arg Leu Val Ala Pro Cys Leu Asn Glu Tyr Thr  
 4260 4265 4270

Ala Ile Ser Tyr Tyr His Ser Gln Phe Arg Gln Gly Gly Gly Gly Pro  
 4275 4280 4285

Cys Leu Ala Asp Gly Gly Tyr Lys Gly Val Gly Met Arg Leu Ser Arg  
 4290 4295 4300

Ala Gly Pro Ser Tyr Ala Val Cys Glu Val Glu Gly Ala Pro Leu Ala  
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Gly Gln Gly Gln Pro Arg Val Pro Pro Asn Tyr Glu Gly Ser Asp Met  
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Val Glu Ser Asp Tyr Gly Ser Cys Glu Glu Val Met Phe  
 4340 4345

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<211> 4351

<212> PRT

<213> Rattus norvegicus

<400> 20

Met Thr Leu Val Leu Leu Gly Leu Ala Ile Leu Leu Leu His Arg Ala  
 1 5 10 15

Ala Cys Glu Lys Ser Leu Glu Glu Thr Ile Pro Pro Leu Ser Trp Arg  
 20 25 30

Phe Thr His Ser Leu Tyr Asn Ala Thr Ile Tyr Glu Asn Ser Ala Pro  
 35 40 45

Lys Thr Tyr Val Glu Ser Pro Val Lys Met Gly Met Tyr Leu Ala Glu  
 50 55 60

Pro His Trp Val Val Lys Tyr Arg Ile Ile Ser Gly Asp Ala Ala Gly  
 65 70 75 80

Val Phe Lys Thr Glu Glu His Val Val Gly Asn Phe Cys Phe Leu Arg  
 85 90 95

Ile Arg Thr Lys Ser Ser Asn Thr Ala Leu Leu Asn Arg Glu Val Arg  
 100 105 110

Asp Ser Tyr Thr Leu Ile Val Gln Ala Ser Asp Lys Ser Leu Glu Phe  
 115 120 125

Glu Ala Leu Thr Gln Val Val Val His Ile Leu Asp Gln Asn Asp Leu  
 130 135 140

Lys Pro Leu Phe Ser Pro Pro Ser Tyr Arg Val Thr Ile Ser Glu Asp  
 145 150 155 160

Arg Pro Leu Lys Ser Pro Ile Cys Lys Val Thr Ala Thr Asp Ala Asp  
 165 170 175

Leu Gly Gln Asn Ala Glu Phe Tyr Tyr Ala Phe Asn Ala Arg Ser Glu  
 180 185 190

Val Phe Ala Ile His Pro Thr Ser Gly Val Val Thr Val Ala Gly Lys  
 195 200 205

Leu Asn Val Thr Arg Arg Gly Lys Tyr Glu Leu Gln Val Leu Ala Val  
 210 215 220

Asp Arg Met Arg Lys Ile Ser Glu Gly Asn Gly Phe Gly Asn Leu Ala  
 225 230 235 240

Ser Leu Val Ile Arg Val Glu Pro Val His Arg Lys Pro Pro Ala Ile  
 245 250 255

Asn Leu Val Val Leu Asn Pro Pro Glu Gly Asp Glu Gly Asp Ile Tyr  
 260 265 270

Ala Ile Val Thr Val Asp Thr Asn Gly Ser Gly Ala Glu Val Asp Ser  
 275 280 285

Leu Glu Val Val Gly Gly Asp Pro Gly Lys Tyr Phe Lys Val Leu Arg  
 290 295 300

Ser Tyr Ala Gln Gly Asn Glu Phe Asn Leu Val Ala Val Arg Asp Ile  
 305 310 315 320

Asn Trp Ala Glu His Pro His Gly Phe Asn Ile Ser Leu Gln Thr His  
 325 330 335

Ser Trp Ser Arg Phe Pro Pro His Ser Ile Ile Arg Ala Phe His Leu  
 340 345 350

Pro Ser Trp Lys Leu Ala Asn Leu Arg Phe Glu Lys Ala Val Tyr Arg  
 355 360 365  
 Val Lys Leu Ser Glu Phe Ser Pro Pro Gly Ser Arg Val Ala Leu Val  
 370 375 380  
 Lys Val Thr Thr Ala Leu Pro Asn Leu Arg Tyr Ser Leu Lys Pro Ser  
 385 390 395 400  
 Ser Arg Asn Thr Ala Phe Lys Leu Asn Ala Arg Thr Gly Leu Ile Thr  
 405 410 415  
 Thr Thr Lys Leu Val Asp Phe His Glu Gln Asn Gln Tyr Gln Leu His  
 420 425 430  
 Val Lys Thr Ser Leu Gly Gln Ala Thr Thr Thr Val Ile Ile Asp Ile  
 435 440 445  
 Val Asp Cys Asn Asn His Ala Pro Val Phe Asn Arg Ser Ser Tyr Glu  
 450 455 460  
 Gly Thr Leu Asp Glu Asn Ile Pro Pro Gly Thr Ser Val Leu Thr Val  
 465 470 475 480  
 Thr Ala Thr Asp Gln Asp His Gly Asp Asn Gly His Ile Thr Tyr Ser  
 485 490 495  
 Ile Ala Gly Pro Lys Ala Val Pro Phe Ser Ile Asp Pro Leu Leu Gly  
 500 505 510  
 Val Ile Ser Thr Thr Lys Pro Met Asp Tyr Glu Leu Met Lys Arg Ile  
 515 520 525  
 Tyr Thr Phe Arg Val Arg Ala Ser Asp Trp Gly Ser Pro Phe Arg Gln  
 530 535 540  
 Glu Lys Glu Val Ser Val Ser Leu Arg Leu Lys Asn Leu Asn Asp Asn  
 545 550 555 560  
 Gln Pro Met Phe Glu Glu Val Asn Cys Thr Val Ser Leu Arg Gln Asp  
 565 570 575  
 Val Pro Val Gly Lys Ser Ile Met Ala Val Ser Ala Ile Asp Met Asp  
 580 585 590  
 Glu Leu Gln Asn Leu Lys Tyr Glu Ile Val Ser Gly Asn Glu Gln Asp  
 595 600 605  
 Tyr Phe His Leu Asn His Phe Ser Gly Val Ile Ser Leu Lys Arg Ser  
 610 615 620  
 Phe Met Asn Leu Thr Ala Val Arg Pro Thr Ile Tyr Ser Leu Lys Ile  
 625 630 635 640  
 Thr Ala Ser Asp Gly Lys Asn Tyr Ala Ser Pro Thr Thr Leu Lys Val  
 645 650 655

Thr	Val	Val	Lys	Asp	Pro	His	Ser	Glu	Val	Pro	Val	Gln	Cys	Asp	Lys	660	665	670	
Thr	Gly	Val	Leu	Thr	His	Ile	Thr	Lys	Thr	Ile	Leu	Gln	Ser	Ala	Gly	675	680	685	
Leu	Gln	Ser	Gln	Glu	Leu	Gly	Glu	Glu	Glu	Phe	Thr	Ser	Leu	Ser	Asn	690	695	700	
Tyr	Gln	Ile	Asn	His	His	Ser	Pro	Gln	Phe	Glu	Asp	His	Phe	Pro	Gln	705	710	715	720
Ser	Ile	Asp	Ile	Leu	Glu	Gln	Val	Pro	Ile	Asn	Thr	Pro	Leu	Ala	Arg	725	730	735	
Leu	Ala	Ala	Thr	Asp	Pro	Asp	Thr	Gly	Phe	His	Gly	Lys	Leu	Val	Tyr	740	745	750	
Val	Ile	Ser	Asp	Gly	Asn	Glu	Glu	Gly	Cys	Phe	Asp	Ile	Glu	Leu	Glu	755	760	765	
Thr	Gly	Leu	Leu	Met	Val	Ala	Ala	Ala	Leu	Asp	Tyr	Glu	Thr	Thr	Ser	770	775	780	
Phe	Tyr	Val	Leu	Asn	Val	Thr	Val	Tyr	Asp	Leu	Gly	Thr	Pro	Pro	Lys	785	790	795	800
Ser	Ser	Trp	Lys	Leu	Leu	Thr	Val	Thr	Val	Lys	Asp	Trp	Asn	Asp	Asn	805	810	815	
Pro	Pro	Arg	Phe	Pro	Pro	Gly	Gly	Tyr	Gln	Leu	Thr	Ile	Ser	Glu	Asp	820	825	830	
Thr	Glu	Val	Gly	Thr	Thr	Ile	Ala	Glu	Leu	Lys	Thr	Glu	Asp	Ala	Asp	835	840	845	
Ser	Glu	Asp	Asn	Arg	Arg	Val	Arg	Tyr	Thr	Leu	Leu	Thr	Pro	Thr	Glu	850	855	860	
Lys	Phe	Ser	Leu	His	Pro	Phe	Thr	Gly	Glu	Leu	Val	Val	Thr	Gly	His	865	870	875	880
Leu	Asp	Arg	Glu	Ser	Glu	Ser	Gln	Tyr	Ile	Leu	Lys	Ala	Glu	Ala	Arg	885	890	895	
Asp	Gln	Pro	Thr	Lys	Gly	His	Gln	Leu	Phe	Ser	Val	Thr	Asp	Leu	Ile	900	905	910	
Val	Thr	Leu	Glu	Asp	Ile	Asn	Asp	Asn	Pro	Pro	Gln	Cys	Ile	Thr	Glu	915	920	925	
His	Arg	Arg	Leu	Lys	Val	Pro	Glu	Asp	Met	Pro	Leu	Gly	Thr	Val	Leu	930	935	940	
Thr	Phe	Leu	Asp	Ala	Ser	Asp	Pro	Asp	Leu	Gly	Pro	Ala	Gly	Glu	Val	945	950	955	960

Lys Tyr Ile Leu Val Glu Asp Ala His Gly Thr Phe Gln Val His Pro  
 965 970 975  
 Met Thr Gly Ala Leu Ser Leu Glu Lys Glu Leu Asp Phe Glu Arg Arg  
 980 985 990  
 Ala Gly Tyr Asn Leu Ser Phe Trp Ala Ser Asp Ser Gly Lys Pro Leu  
 995 1000 1005  
 Ser Arg Arg Thr Leu Cys His Val Glu Val Leu Val Met Asp Val Asn  
 1010 1015 1020  
 Glu Asn Leu His Ser Pro His Phe Ser Ser Phe Val Tyr Gln Gly Gln  
 1025 1030 1035 1040  
 Val Gln Glu Asn Ser Pro Ala Gly Thr Pro Val Met Val Val Thr Ala  
 1045 1050 1055  
 Gln Asp Asp Asp Ser Gly Leu Asp Gly Glu Leu Gln Tyr Phe Leu Arg  
 1060 1065 1070  
 Ala Gly Thr Gly Leu Glu Thr Phe Ser Ile Asn Gln Asp Thr Gly Met  
 1075 1080 1085  
 Leu Glu Thr Leu Ala Pro Leu Asp Arg Glu Phe Thr Pro Tyr Tyr Trp  
 1090 1095 1100  
 Leu Thr Val Leu Ala Val Asp Arg Gly Ser Val Pro Leu Ser Ala Val  
 1105 1110 1115 1120  
 Thr Glu Val Tyr Ile Glu Val Thr Asp Ile Asn Asp Asn Ile Pro Ser  
 1125 1130 1135  
 Met Ser Arg Pro Val Phe Tyr Pro Ser Val Leu Glu Asp Ala Pro Leu  
 1140 1145 1150  
 Gly Thr Ser Val Leu Gln Leu Glu Ala Trp Asp Pro Asp Ser Ser Ser  
 1155 1160 1165  
 Gln Gly Lys Leu Thr Phe Asn Leu Thr Ser Gly Asn His Leu Gly His  
 1170 1175 1180  
 Phe Ile Val His Pro Phe Thr Gly Leu Leu Thr Thr Ala Lys Gln Leu  
 1185 1190 1195 1200  
 Asp Arg Glu Asn Lys Asp Glu Tyr Val Leu Glu Val Thr Val Gln Asp  
 1205 1210 1215  
 Asn Gly Asp Pro Ser Leu Arg Ser Thr Ser Arg Val Val Val Cys Ile  
 1220 1225 1230  
 Leu Asp Val Asn Asp Asn Pro Pro Met Phe Ser His Lys Leu Phe Asn  
 1235 1240 1245  
 Val Arg Leu Ser Glu Arg Leu Ser Pro Leu Ser Pro Glu Pro Val Tyr  
 1250 1255 1260

Arg Leu Val Ala Ser Asp Pro Asp Glu Gly Leu Asn Gly Ser Val Thr  
 1265 1270 1275 1280  
 Tyr Ser Ile Glu Glu Ser Asp Glu Glu Ser Phe Arg Ile Asp Pro Val  
 1285 1290 1295  
 Thr Gly Val Val Ser Ser Ser Ser Thr Phe Ala Ala Gly Glu Tyr Asn  
 1300 1305 1310  
 Ile Leu Thr Ile Lys Ala Thr Asp Ser Gly Gln Pro Ala Leu Ser Thr  
 1315 1320 1325  
 Ser Val Arg Leu His Ile Glu Trp Ile Pro Gln Pro Arg Pro Ser Ser  
 1330 1335 1340  
 Ile Pro Leu Ser Phe Asp Glu Ser Tyr Tyr Ser Phe Thr Val Met Glu  
 1345 1350 1355 1360  
 Thr Asp Pro Val Asn His Met Val Gly Val Ile Ser Val Glu Gly Arg  
 1365 1370 1375  
 Pro Gly Leu Phe Trp Phe His Ile Ser Asp Gly Asp Lys Asp Met Asp  
 1380 1385 1390  
 Phe Asp Ile Glu Lys Thr Thr Gly Ser Ile Val Ile Ala Arg Pro Leu  
 1395 1400 1405  
 Asp Thr Arg Arg Lys Ser Ser Tyr Asn Leu Thr Val Glu Val Thr Asp  
 1410 1415 1420  
 Gly Phe His Thr Ile Ala Thr Gln Val His Ile Phe Met Ile Ala Asn  
 1425 1430 1435 1440  
 Ile Asn His His Arg Pro Gln Phe Leu Gln Asp His Tyr Glu Ile Arg  
 1445 1450 1455  
 Val Pro Gln Asp Thr Leu Pro Gly Val Glu Leu Leu Arg Val Gln Ala  
 1460 1465 1470  
 Thr Asp Gln Asp His Gly Lys Gly Leu Ile Tyr Thr Ile Leu Ser Ser  
 1475 1480 1485  
 Gln Asp Pro Gly Ser Ala Asn Leu Phe Gln Leu Asp Pro Ser Ser Gly  
 1490 1495 1500  
 Val Leu Val Thr Val Gly Thr Leu Glu Leu His Ser Gly Pro Ser Gln  
 1505 1510 1515 1520  
 His Ile Leu Thr Val Met Val Arg Asp Gln Glu Met Pro Ile Lys Arg  
 1525 1530 1535  
 Asn Phe Val Trp Val Thr Ile His Val Glu Asp Gly Asn Leu His Ser  
 1540 1545 1550  
 Pro His Phe Thr Gln Leu Arg Tyr Glu Ala Asn Val Pro Asp Thr Thr  
 1555 1560 1565

Ala Pro Gly Thr Glu Leu Leu Gln Val Arg Ala Val Asp Ala Asp Arg  
 1570 1575 1580

Gly Ala Asn Ala Glu Ile His Tyr Ser Phe Leu Lys Gly Asn Ser Asp  
 1585 1590 1595 1600

Gly Phe Phe Asn Ile Asp Ser Leu Leu Gly Ile Ile Thr Val Ala Gln  
 1605 1610 1615

Arg Leu Tyr His Val His Leu Thr Arg His Ala Leu Thr Val Lys Ala  
 1620 1625 1630

Glu Asp Gln Gly Ser Pro Arg Arg His Asp Leu Ala Leu Val Val Ile  
 1635 1640 1645

His Val His Pro Ser Asp Ser Ser Ala Pro Val Phe Ser Lys Asp Glu  
 1650 1655 1660

Tyr Phe Ile Glu Ile Pro Glu Ser Val Pro Ile Gly Ser Pro Ile Leu  
 1665 1670 1675 1680

Leu Leu Ser Ala Gly Ser Ser Ser Glu Val Thr Tyr Glu Leu Arg Glu  
 1685 1690 1695

Gly Asn Lys Asp Ser Val Phe Ser Met Asn Ser Tyr Ser Gly Leu Ile  
 1700 1705 1710

Ser Thr Gln Lys Arg Leu Asp His Glu Lys Val Pro Ser Tyr Arg Leu  
 1715 1720 1725

Arg Ile Arg Gly Ser Asn Met Ala Gly Val Phe Thr Glu Val Val Ala  
 1730 1735 1740

Leu Val Tyr Ile Ile Asp Glu Asn Asp Asn Pro Pro Ala Phe Gly Lys  
 1745 1750 1755 1760

Pro Thr Phe Leu Gly His Ile Ser Glu Ala Ala Pro Leu His Ser Leu  
 1765 1770 1775

Ile Leu Gly Glu Asp Asn Ser Pro Leu Val Val Arg Ala Ser Asp Ser  
 1780 1785 1790

Asp Arg Glu Ala Asn Ser Leu Leu Val Tyr Lys Ile Leu Glu Pro Glu  
 1795 1800 1805

Ala Leu Lys Phe Phe Lys Ile Asp Pro Ser Met Gly Thr Leu Thr Thr  
 1810 1815 1820

Thr Ser Glu Leu Asp Phe Glu Asp Thr Pro Leu Phe Gln Phe Asn Ile  
 1825 1830 1835 1840

Tyr Val His Asp Gln Gly Thr Pro Ile Leu Phe Ala Pro Arg Ser Ala  
 1845 1850 1855

Lys Val Ile Ile His Val Arg Asp Val Asn Asp Ser Pro Pro Arg Phe  
 1860 1865 1870



Ser Glu Gln Ile Tyr Glu Val Ala Val Val Glu Pro Ile His Pro Gly  
 1875 1880 1885

Met Gly Leu Leu Thr Val Gln Ala Glu Asp Asn Asp Ser Arg Val Thr  
 1890 1895 1900

Tyr Ser Ile Lys Thr Ser Asn Ala Asp Glu Ala Val Thr Ile His Pro  
 1905 1910 1915 1920

Thr Thr Gly Gln Ile Ser Val Val Asn Pro Ala Thr Leu Arg Leu Phe  
 1925 1930 1935

Gln Lys Phe Ser Ile Arg Ala Ser Asp Gly Leu Tyr His Asp Thr Ala  
 1940 1945 1950

Val Val Lys Ile Ser Leu Thr Gln Val Leu Asp Lys Ser Leu Gln Phe  
 1955 1960 1965

Asp Gln Asp Val Tyr Arg Ala Arg Val Thr Glu Asn Thr Pro His Arg  
 1970 1975 1980

Lys Ala Leu Val Ile Leu Gly Val His Gly Asn His Leu Asn Asp Thr  
 1985 1990 1995 2000

Leu Ser Tyr Phe Leu Leu Asn Gly Thr Asp Leu Phe His Met Ile Glu  
 2005 2010 2015

Ser Ala Gly Val Leu Gln Thr Arg Gly Gly Thr Phe Asp Arg Glu Gln  
 2020 2025 2030

Gln Asp Thr His Glu Val Ala Val Glu Val Arg Asp Asn Arg Val Pro  
 2035 2040 2045

Gln Arg Val Ala Gln Ala Leu Val Arg Val Ser Val Glu Asp Val Asn  
 2050 2055 2060

Asp Asn Ile Pro Glu Phe Gln His Leu Pro Tyr Tyr Thr Val Ile Gln  
 2065 2070 2075 2080

Asp Gly Thr Glu Pro Gly Asp Val Leu Phe Gln Val Ser Ala Thr Asp  
 2085 2090 2095

Lys Asp Leu Gly Ala Asn Gly Ser Val Thr Tyr Gly Phe Ala Glu Asp  
 2100 2105 2110

Tyr Ala Tyr Phe Arg Ile Asp Pro Tyr Val Gly Asp Ile Ser Leu Lys  
 2115 2120 2125

Lys Pro Phe Asp Tyr Gln Ala Leu Asn Lys Tyr His Leu Arg Val Ile  
 2130 2135 2140

Ala Arg Asp Ser Gly Ile Pro Pro Leu Gln Thr Glu Val Glu Val His  
 2145 2150 2155 2160

Val Thr Val Arg Asn Lys Ser Asn Pro Leu Phe Gln Ser Pro Tyr Tyr  
 2165 2170 2175

Lys Val Lys Val Pro Glu Asn Ile Thr Leu Tyr Thr Pro Ile Leu His  
 2180 2185 2190  
 Thr Gln Ala Arg Ser Pro Glu Gly Leu Arg Leu Ile Tyr Asn Ile Val  
 2195 2200 2205  
 Glu Glu Glu Pro Leu Met Leu Phe Thr Thr Asp Phe Lys Thr Gly Val  
 2210 2215 2220  
 Leu Thr Val Thr Gly Pro Leu Asp Tyr Glu Ser Lys Asn Lys His Val  
 2225 2230 2235 2240  
 Phe Thr Val Arg Ala Thr Asp Thr Ala Leu Gly Ser Phe Ser Glu Ala  
 2245 2250 2255  
 Thr Val Glu Val Leu Val Glu Asp Ile Asn Asp Asn Pro Pro Thr Phe  
 2260 2265 2270  
 Ser Gln Leu Val Tyr Thr Thr Ser Val Ser Glu Gly Ser Pro Ala Gln  
 2275 2280 2285  
 Thr Pro Val Ile Gln Leu Leu Ala Ser Asp Gln Asp Ser Gly Gln Asn  
 2290 2295 2300  
 Gln Asp Val Ser Tyr Gln Ile Val Glu Asp Gly Ser Asp Val Ser Lys  
 2305 2310 2315 2320  
 Phe Phe Arg Ile Asn Gly Ser Thr Gly Glu Ile Phe Thr Ile Gln Glu  
 2325 2330 2335  
 Leu Asp Tyr Glu Thr His Gln His Phe Arg Val Lys Val Arg Ala Met  
 2340 2345 2350  
 Asp Lys Gly Asp Pro Pro Leu Thr Gly Glu Thr Leu Val Val Val Asn  
 2355 2360 2365  
 Val Ser Asp Ile Asn Asp Asn Pro Pro Lys Phe Arg Glu Pro Gln Tyr  
 2370 2375 2380  
 Glu Ala Asn Val Ser Glu Leu Ala Thr Cys Gly His Leu Val Leu Lys  
 2385 2390 2395 2400  
 Val Gln Ala Leu Asp Pro Asp Ile Gly Asp Thr Ser Arg Leu Glu Tyr  
 2405 2410 2415  
 Leu Ile Leu Ser Gly Asn Gln Asp Arg His Phe Ser Ile Asn Ser Thr  
 2420 2425 2430  
 Ser Gly Ile Ile Ser Met Phe Asn Leu Cys Lys Lys Gln Leu Asp Ser  
 2435 2440 2445  
 Ser Tyr Asn Leu Arg Val Gly Ala Ser Asp Gly Val Phe Arg Ala Thr  
 2450 2455 2460  
 Val Pro Val Tyr Ile Asn Thr Thr Asn Ala Asn Lys Tyr Ser Pro Glu  
 2465 2470 2475 2480

Phe Gln Gln Asn Val Tyr Glu Ala Glu Leu Ala Glu Asn Ala Lys Val  
 2485 2490 2495

Gly Thr Lys Val Ile Glu Leu Leu Ala Ile Asp Lys Asp Ser Gly Pro  
 2500 2505 2510

Tyr Gly Thr Val Asp Tyr Thr Ile Ile Asn Lys Leu Ala Gly Glu Arg  
 2515 2520 2525

Phe Phe Ile Asn Pro Arg Gly Gln Ile Thr Thr Leu Gln Lys Leu Asp  
 2530 2535 2540

Arg Glu Asn Ser Thr Glu Arg Val Ile Ala Ile Lys Val Met Ala Arg  
 2545 2550 2555 2560

Asp Gly Gly Gly Lys Val Ala Phe Cys Thr Val Lys Ile Ile Leu Thr  
 2565 2570 2575

Asp Glu Asn Asp Asn Ala Pro Gln Phe Lys Ala Ser Gly Tyr Thr Val  
 2580 2585 2590

Ser Ile Pro Ser Asn Val Ser Arg Asp Ser Pro Ile Ile Gln Val Leu  
 2595 2600 2605

Ala Tyr Asp Ala Asp Glu Gly Arg Asn Ala Asp Val Thr Tyr Ser Val  
 2610 2615 2620

Asp Ser Thr Glu Asp Leu Ala Glu Glu Ile Ile Glu Val Asn Pro Thr  
 2625 2630 2635 2640

Thr Gly Val Val Lys Val Lys Glu Ser Leu Val Gly Leu Glu Asn Arg  
 2645 2650 2655

Ala Val Asp Phe Asn Ile Lys Ala Gln Asp Gly Gly Pro Pro His Trp  
 2660 2665 2670

Asp Ser Leu Val Pro Val Arg Leu Gln Val Val Pro Asn Glu Ile Pro  
 2675 2680 2685

Leu Pro Lys Phe Ser Glu Pro Leu Tyr Thr Phe Ser Ala Pro Glu Asp  
 2690 2695 2700

Leu Pro Glu Gly Ser Glu Ile Gly Ser Val Lys Ala Val Ala Ala Gln  
 2705 2710 2715 2720

Asp Pro Ile Ile Tyr Ser Leu Val Gln Gly Thr Thr Pro Glu Ser Asn  
 2725 2730 2735

Ser Asp Asp Val Phe Ser Leu Asp Gln Asp Thr Gly Val Leu Lys Val  
 2740 2745 2750

Arg Lys Ala Met Asp His Glu Ser Thr Lys Trp Tyr Gln Ile Asp Leu  
 2755 2760 2765

Met Ala His Cys Pro His Glu Asp Thr Asp Leu Val Ser Leu Val Ser  
 2770 2775 2780

Val Ser Ile Gln Val Glu Asp Val Asn Asp Asn Arg Pro Val Phe Glu  
2785 2790 2795 2800  
Ala Asp Pro Tyr Lys Ala Phe Leu Thr Glu Asn Met Pro Gly Gly Thr  
2805 2810 2815  
Thr Val Ile Gln Val Thr Ala Asn Asp Gln Asp Thr Gly Ser Asp Gly  
2820 2825 2830  
Gln Val Ser Tyr Arg Leu Ser Val Glu Pro Gly Ser Asn Ile His Glu  
2835 2840 2845  
Leu Phe Ala Val Asp Ser Glu Ser Gly Trp Ile Thr Thr Leu Gln Glu  
2850 2855 2860  
Leu Asp Cys Glu Thr Gln Gln Thr Tyr Arg Phe Tyr Val Val Ala Phe  
2865 2870 2875 2880  
Asp His Gly Gln Thr Ile Gln Leu Ser Ser Gln Ala Leu Val Glu Val  
2885 2890 2895  
Ser Ile Thr Asp Glu Asn Asp Asn Pro Pro Arg Phe Ala Ser Glu Asp  
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Tyr Arg Gly Ser Val Val Glu Asn Asn Glu Pro Gly Glu Leu Val Ala  
2915 2920 2925  
Thr Leu Lys Thr Leu Asp Ala Asp Val Ser Asp Gln Asn Arg Gln Val  
2930 2935 2940  
Thr Cys Tyr Ile Thr Glu Gly Asp Pro Leu Gly Gln Phe Ser Ile Ser  
2945 2950 2955 2960  
Gln Val Gly Asp Glu Trp Arg Ile Ser Ser Arg Lys Thr Leu Asp Arg  
2965 2970 2975  
Glu His Ile Ala Lys Tyr Leu Leu Arg Val Thr Ala Ser Asp Gly Lys  
2980 2985 2990  
Phe Gln Ala Ser Val Pro Val Glu Val Phe Val Val Asp Ile Asn Asp  
2995 3000 3005  
Asn Ser Pro Gln Cys Ser Gln Leu Leu Tyr Thr Gly Lys Val Arg Glu  
3010 3015 3020  
Asp Val Thr Pro Gly His Phe Ile Leu Lys Val Ser Ala Ile Asp Val  
3025 3030 3035 3040  
Asp Met Asp Thr Asn Ala Gln Ile Thr Tyr Ser Leu His Gly Pro Gly  
3045 3050 3055  
Ala Gln Glu Phe Lys Leu Asp Pro His Thr Gly Glu Leu Thr Thr Leu  
3060 3065 3070  
Thr Val Leu Asp Arg Glu Arg Lys Asp Val Tyr Asn Leu Val Ala Lys  
3075 3080 3085

Ala Thr Asp Gly Gly Gly Gln Ser Cys Gln Ala Glu Val Thr Leu His  
 3090 3095 3100

Ile Glu Asp Val Asn Asp Asn Ala Pro Arg Phe Phe Pro Ser His Cys  
 3105 3110 3115 3120

Asp Val Ala Val Phe Asp Asn Thr Thr Val Lys Thr Pro Val Ala Val  
 3125 3130 3135

Val Phe Ala Arg Asp Pro Asp Gln Gly Ala Asn Ala Gln Val Val Tyr  
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Ser Leu Thr Asp Ser Ala Asp Gly Gln Phe Ser Ile Asp Ala Thr Ser  
 3155 3160 3165

Gly Val Ile Arg Leu Glu Lys Pro Leu Gln Val Arg Ala Ser Ser Ala  
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Val Glu Leu Thr Val Arg Ala Ser Asp Leu Gly Thr Pro Ile Pro Leu  
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Ser Thr Leu Gly Thr Val Thr Val Ser Val Val Gly Leu Glu Asp Tyr  
 3205 3210 3215

Leu Pro Ile Phe Leu Asn Ala Glu His Ser Thr Gln Val Pro Glu Asp  
 3220 3225 3230

Ala Pro Ile Asp Met Glu Val Leu His Leu Ala Thr Leu Thr Arg Pro  
 3235 3240 3245

Gly Ser Glu Lys Thr Gly Tyr His Ile Thr Gly Gly Asn Glu Gln Gly  
 3250 3255 3260

Lys Phe Arg Leu Asp Ala His Thr Gly Ile Leu Tyr Val Asn Gly Ser  
 3265 3270 3275 3280

Leu Asp Phe Glu Thr Asn Pro Lys Tyr Phe Leu Ser Ile Glu Cys Ser  
 3285 3290 3295

Arg Lys Ser Ser Ser Ser Leu Ser Asp Val Thr Thr Ile Val Ile Asn  
 3300 3305 3310

Val Thr Asp Val Asn Glu His His Pro Arg Phe Thr His Asp Leu Tyr  
 3315 3320 3325

Thr Val Arg Val Leu Glu Asn Ala Val Val Gly Asp Val Ile Leu Thr  
 3330 3335 3340

Val Ser Ala Ser Asp Asp Asp Gly Pro Val Asn Ser Ala Ile Thr Tyr  
 3345 3350 3355 3360

Ser Leu Val Gly Gly Asn Gln Leu Gly His Phe Thr Ile Asn Pro Lys  
 3365 3370 3375

Lys Gly Lys Leu Gln Val Ala Lys Ala Leu Asp Trp Glu Gln Thr Pro  
 3380 3385 3390

Ser Tyr Ser Leu Arg Leu Arg Ala Thr Asp Ser Gly Gln Pro Pro Leu  
 3395 3400 3405  
 His Glu Asp Thr Glu Val Ala Val Glu Val Val Asp Val Asn Asp Asn  
 3410 3415 3420  
 Pro Pro Arg Phe Phe Gln Leu Asn Tyr Ser Thr Ser Val Gln Glu Asn  
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 Ser Pro Ile Gly Ile Lys Val Leu Gln Leu Ile Leu Asp Asp Pro Asp  
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 Ser Pro Gln Asn Gly Pro Pro Tyr Phe Phe Arg Ile Thr Glu Gly Asn  
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 Thr Gly Ser Val Phe Arg Val Thr Pro Asp Gly Trp Leu Val Thr Ala  
 3475 3480 3485  
 Ala Ser Leu Ser Lys Lys Ala Arg Glu Trp Tyr Gln Leu His Ile Glu  
 3490 3495 3500  
 Val Ser Asp Ser Gly Leu Pro Pro Leu Ser Ser Ser Thr Leu Val Arg  
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 Val Gln Val Thr Glu Gln Ser Arg Tyr Pro Pro Ser Thr Leu Pro Leu  
 3525 3530 3535  
 Glu Ile Ser Ile Thr Lys Gly Glu Glu Glu Phe Gln Gly Gly Met Ile  
 3540 3545 3550  
 Gly Lys Ile His Ala Thr Asp Arg Asp Pro Gln Asp Thr Leu Thr Tyr  
 3555 3560 3565  
 Ser Leu Glu Gln Glu Gly Gly Leu Asp Arg Tyr Phe Thr Val Gly Ala  
 3570 3575 3580  
 Ser Asp Gly Lys Ile Ile Ala Ser Gln Gly Leu Pro His Gly Arg Tyr  
 3585 3590 3595 3600  
 Ser Phe Asn Val Thr Val Ser Asp Gly Thr Phe Thr Thr Thr Thr Gly  
 3605 3610 3615  
 Val His Val His Val Trp His Met Glu Pro Glu Val Pro Gln Gln Ala  
 3620 3625 3630  
 Val Trp Leu Gly Phe His Gln Leu Thr Pro Glu Glu Leu Val Ser Asp  
 3635 3640 3645  
 His Trp Arg Asn Leu Gln Arg Phe Leu Ser Asn Leu Leu Asp Val Lys  
 3650 3655 3660  
 Arg Ala Asn Ile His Leu Ala Ser Leu Gln Pro Ala Glu Val Thr Ala  
 3665 3670 3675 3680  
 Gly Val Asp Val Leu Leu Val Phe Glu Arg His Ser Gly Thr Ser Tyr  
 3685 3690 3695

Asp Leu Gln Glu Leu Ala Ser Ala Ile Ala His Ser Val Arg Glu Ile  
 3700 3705 3710

Glu His Ser Val Gly Ile Arg Met Arg Ser Ala Leu Pro Val Val Pro  
 3715 3720 3725

Cys Gln Gly Gln Ser Cys Gln Asp Gln Thr Cys Gln Glu Thr Val Ser  
 3730 3735 3740

Leu Glu Pro Arg Val Gly Pro Ser Tyr Ser Thr Ala Arg Leu Ser Ile  
 3745 3750 3755 3760

Leu Thr Pro Arg His His Leu Gly Arg Asn Cys Ser Cys Asn Gly Thr  
 3765 3770 3775

Thr Leu Arg Phe Ser Gly Gln Ser Tyr Val Gln Tyr Arg Pro Leu Glu  
 3780 3785 3790

Ala Gln Asn Trp Gln Ile His Phe Tyr Leu Lys Thr Leu Gln Pro Trp  
 3795 3800 3805

Ala Leu Leu Met Phe Thr Asn Glu Thr Ala Ser Ile Ser Leu Lys Leu  
 3810 3815 3820

Ala Asn Gly Phe Ser His Leu Glu Tyr His Cys Pro Gly Gly Phe Tyr  
 3825 3830 3835 3840

Gly Asn Leu Ser Ser Arg Tyr Pro Val Asn Asp Gly Gln Trp His Ser  
 3845 3850 3855

Met Leu Leu Glu Glu Arg Asp Thr Ser Val His Leu Leu Val Asp Ile  
 3860 3865 3870

Thr Asp Asn Ala Ser Leu Val Ile Pro Glu Glu Cys Gln Gly Leu Arg  
 3875 3880 3885

Thr Glu Arg Gln Leu Leu Leu Gly Gly Leu Val Pro Ser Asn Pro Ser  
 3890 3895 3900

Ser Asn Val Ser Leu Gly Phe Glu Gly Cys Leu Asp Ala Val Val Val  
 3905 3910 3915 3920

Asn Gly Glu Arg Leu Glu Leu Leu Gly Arg Glu Lys Lys Met Glu Gly  
 3925 3930 3935

Arg Leu Glu Thr Trp Ala Leu Ser Gln Cys Cys Trp Pro Gly Thr Ala  
 3940 3945 3950

Cys Ser Gln Ser Pro Cys Leu Asn Gly Gly Ser Cys Ser Pro Ala Leu  
 3955 3960 3965

Gly Ser Gly Tyr Leu Cys Arg Cys Pro Pro Pro Phe Ser Gly Arg Asn  
 3970 3975 3980

Cys Glu Leu Gly Arg Glu Asn Cys Thr Ser Ala Pro Cys Gln Glu Gly  
 3985 3990 3995 4000

Gly Thr Cys Val Ser Ser Pro Glu Gly Thr Ser Cys Asn Cys Pro His  
 4005 4010 4015  
 Pro Tyr Thr Gly Asp Arg Cys Glu Met Glu Ala Arg Gly Cys Ser Gly  
 4020 4025 4030  
 Gly His Cys Leu Ile Thr Pro Glu Ile Lys Arg Gly Asp Trp Gly Gln  
 4035 4040 4045  
 Gln Glu Phe Leu Val Ile Thr Val Ala Leu Pro Leu Val Ile Ile Ala  
 4050 4055 4060  
 Thr Val Gly Leu Leu Leu Tyr Cys Arg Arg Arg Lys Ser His Lys Pro  
 4065 4070 4075 4080  
 Val Thr Met Glu Asp Pro Asp Leu Leu Ala Arg Ser Ile Gly Val Asp  
 4085 4090 4095  
 Thr Gln Ala Ser Pro Ala Ile Glu Leu Asp Pro Leu Asn Thr Ser Ser  
 4100 4105 4110  
 Cys Asn Asn Leu Asn Gln Pro Glu Pro Ser Lys Thr Ser Val Pro Asn  
 4115 4120 4125  
 Glu Leu Val Thr Phe Gly Pro Ser Ser Lys Gln Arg Pro Met Val Cys  
 4130 4135 4140  
 Ser Val Pro Pro Arg Leu Pro Pro Ala Ala Val Ser Ser His Pro Gly  
 4145 4150 4155 4160  
 His Glu Pro Ile Ile Lys Arg Thr Trp Ser Gly Glu Glu Leu Val Tyr  
 4165 4170 4175  
 Pro Ser Gly Ala Ala Val Trp Pro Pro Thr Tyr Ser Arg Lys Lys His  
 4180 4185 4190  
 Trp Glu Tyr Pro His Pro Glu Thr Met Gln Gly Thr Leu Pro Pro Ser  
 4195 4200 4205  
 Pro Arg Arg His Val Gly Pro Ala Val Met Pro Asp Pro Thr Gly Leu  
 4210 4215 4220  
 Tyr Gly Gly Phe Pro Phe Pro Leu Glu Leu Glu Asn Lys Arg Ala Pro  
 4225 4230 4235 4240  
 Leu Pro Pro Arg Tyr Ser Asn Gln Asn Leu Glu Asp Leu Met Pro Pro  
 4245 4250 4255  
 Arg Pro Pro Ser Pro Arg Glu His Leu Leu Ala Pro Cys Leu Asn Glu  
 4260 4265 4270  
 Tyr Thr Ala Ile Ser Tyr Tyr His Ser Gln Phe Arg Gln Gly Gly Gly  
 4275 4280 4285  
 Gly Pro Cys Leu Ala Glu Gly Gly Tyr Lys Gly Val Ser Met Arg Leu  
 4290 4295 4300



Ser Arg Ala Gly Pro Ser Tyr Ala Asp Cys Glu Val Asn Gly Gly Pro  
 4305 4310 4315 4320

Ala Thr Gly Arg Ser Gln Pro Arg Ala Pro Pro Asn Tyr Glu Gly Ser  
 4325 4330 4335

Asp Met Val Glu Ser Asp Tyr Gly Ser Cys Glu Glu Val Met Phe  
 4340 4345 4350

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 <211> 4590  
 <212> PRT  
 <213> Homo sapiens

<400> 21  
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His Phe Gly Asp Ser Asp Gly Ser Gln Arg Leu Glu Gln Thr Pro Leu  
 20 25 30

Gln Phe Thr His Leu Glu Tyr Asn Val Thr Val Gln Glu Asn Ser Ala  
 35 40 45

Ala Lys Thr Tyr Val Gly His Pro Val Lys Met Gly Val Tyr Ile Thr  
 50 55 60

His Pro Ala Trp Glu Val Arg Tyr Lys Ile Val Ser Gly Asp Ser Glu  
 65 70 75 80

Asn Leu Phe Lys Ala Glu Glu Tyr Ile Leu Gly Asp Phe Cys Phe Leu  
 85 90 95

Arg Ile Arg Thr Lys Gly Gly Asn Thr Ala Ile Leu Asn Arg Glu Val  
 100 105 110

Lys Asp His Tyr Thr Leu Ile Val Lys Ala Leu Glu Lys Asn Thr Asn  
 115 120 125

Val Glu Ala Arg Thr Lys Val Arg Val Gln Val Leu Asp Thr Asn Asp  
 130 135 140

Leu Arg Pro Leu Phe Ser Pro Thr Ser Tyr Ser Val Ser Leu Pro Glu  
 145 150 155 160

Asn Thr Ala Ile Arg Thr Ser Ile Ala Arg Val Ser Ala Thr Asp Ala  
 165 170 175

Asp Ile Gly Thr Asn Gly Glu Phe Tyr Tyr Ser Phe Lys Asp Arg Thr  
 180 185 190

Asp Met Phe Ala Ile His Pro Thr Ser Gly Val Ile Val Leu Thr Gly  
 195 200 205

Arg Leu Asp Tyr Leu Glu Thr Lys Leu Tyr Glu Met Glu Ile Leu Ala

210	215	220
Ala Asp Arg Gly Met Lys Leu Tyr Gly Ser Ser Gly Ile Ser Ser Met 225 230 235 240		
Ala Lys Leu Thr Val His Ile Glu Gln Ala Asn Glu Cys Ala Pro Val 245 250 255		
Ile Thr Ala Val Thr Leu Ser Pro Ser Glu Leu Asp Arg Asp Pro Ala 260 265 270		
Tyr Ala Ile Val Thr Val Asp Asp Cys Asp Gln Gly Ala Asn Gly Asp 275 280 285		
Ile Ala Ser Leu Ser Ile Val Ala Gly Asp Leu Leu Gln Gln Phe Arg 290 295 300		
Thr Val Arg Ser Phe Pro Gly Ser Lys Glu Tyr Lys Val Lys Ala Ile 305 310 315 320		
Gly Asp Ile Asp Trp Asp Ser His Pro Phe Gly Tyr Asn Leu Thr Leu 325 330 335		
Gln Ala Lys Asp Lys Gly Thr Pro Pro Gln Phe Ser Ser Val Lys Val 340 345 350		
Ile His Val Thr Ser Pro Gln Phe Lys Ala Gly Pro Val Lys Phe Glu 355 360 365		
Lys Asp Val Tyr Arg Ala Glu Ile Ser Glu Phe Ala Pro Pro Asn Thr 370 375 380		
Pro Val Val Met Val Lys Ala Ile Pro Ala Tyr Ser His Leu Arg Tyr 385 390 395 400		
Val Phe Lys Arg Thr Pro Gly Lys Ala Lys Phe Ser Leu Asn Tyr Asn 405 410 415		
Thr Gly Leu Ile Ser Ile Leu Glu Pro Val Lys Arg Gln Gln Ala Ala 420 425 430		
His Phe Glu Leu Glu Val Thr Thr Ser Asp Arg Lys Ala Ser Thr Lys 435 440 445		
Val Leu Val Lys Val Leu Gly Ala Asn Ser Asn Pro Pro Glu Phe Thr 450 455 460		
Gln Thr Ala Tyr Lys Ala Ala Phe Asp Glu Asn Val Pro Ile Gly Thr 465 470 475 480		
Thr Ile Met Ser Leu Ser Ala Val Asp Pro Asp Glu Gly Glu Asn Gly 485 490 495		
Tyr Val Thr Tyr Ser Ile Ala Asn Leu Asn His Val Pro Phe Ala Ile 500 505 510		
Asp His Phe Thr Gly Ala Val Ser Thr Ser Glu Asn Leu Asp Tyr Glu		

515					520					525						
Leu	Met	Pro	Arg	Val	Tyr	Thr	Leu	Arg	Ile	Arg	Ala	Ser	Asp	Trp	Gly	
530					535					540						
Leu	Pro	Tyr	Arg	Arg	Glu	Val	Glu	Val	Leu	Ala	Thr	Ile	Thr	Leu	Asn	
545					550					555					560	
Asn	Leu	Asn	Asp	Asn	Thr	Pro	Leu	Phe	Glu	Lys	Ile	Asn	Cys	Glu	Gly	
565					570					575						
Thr	Ile	Pro	Arg	Asp	Leu	Gly	Val	Gly	Glu	Gln	Ile	Thr	Thr	Val	Ser	
580					585					590						
Ala	Ile	Asp	Ala	Asp	Glu	Leu	Gln	Leu	Val	Gln	Tyr	Gln	Ile	Glu	Ala	
595					600					605						
Gly	Asn	Glu	Leu	Asp	Leu	Phe	Ser	Leu	Asn	Pro	Asn	Ser	Gly	Val	Leu	
610					615					620						
Ser	Leu	Lys	Arg	Ser	Leu	Met	Asp	Gly	Leu	Gly	Ala	Lys	Val	Ser	Phe	
625					630					635					640	
His	Ser	Leu	Arg	Ile	Thr	Ala	Thr	Asp	Gly	Glu	Asn	Phe	Ala	Thr	Pro	
645					650					655						
Leu	Tyr	Ile	Asn	Ile	Thr	Val	Ala	Ala	Ser	His	Lys	Leu	Val	Asn	Leu	
660					665					670						
Gln	Cys	Glu	Glu	Thr	Gly	Val	Ala	Lys	Met	Leu	Ala	Glu	Lys	Leu	Leu	
675					680					685						
Gln	Ala	Asn	Lys	Leu	His	Asn	Gln	Gly	Glu	Val	Glu	Asp	Ile	Phe	Phe	
690					695					700						
Asp	Ser	His	Ser	Val	Asn	Ala	His	Ile	Pro	Gln	Phe	Arg	Ser	Thr	Leu	
705					710					715					720	
Pro	Thr	Gly	Ile	Gln	Val	Lys	Glu	Asn	Gln	Pro	Val	Gly	Ser	Ser	Val	
725					730					735						
Ile	Phe	Met	Asn	Ser	Thr	Asp	Leu	Asp	Thr	Gly	Phe	Asn	Gly	Lys	Leu	
740					745					750						
Val	Tyr	Ala	Val	Ser	Gly	Gly	Asn	Glu	Asp	Ser	Cys	Phe	Met	Ile	Asp	
755					760					765						
Met	Glu	Thr	Gly	Met	Leu	Lys	Ile	Leu	Ser	Pro	Leu	Asp	Arg	Glu	Thr	
770					775					780						
Thr	Asp	Lys	Tyr	Thr	Leu	Asn	Ile	Thr	Val	Tyr	Asp	Leu	Gly	Ile	Pro	
785					790					795					800	
Gln	Lys	Ala	Ala	Trp	Arg	Leu	Leu	His	Val	Val	Val	Val	Asp	Ala	Asn	
805					810					815						
Asp	Asn	Pro	Pro	Glu	Phe	Leu	Gln	Glu	Ser	Tyr	Phe	Val	Glu	Val	Ser	

820					825					830					
Glu	Asp	Lys	Glu	Val	His	Ser	Glu	Ile	Ile	Gln	Val	Glu	Ala	Thr	Asp
		835					840					845			
Lys	Asp	Leu	Gly	Pro	Asn	Gly	His	Val	Thr	Tyr	Ser	Ile	Leu	Thr	Asp
		850				855					860				
Thr	Asp	Thr	Phe	Ser	Ile	Asp	Ser	Val	Thr	Gly	Val	Val	Asn	Ile	Ala
865					870					875					880
Arg	Pro	Leu	Asp	Arg	Glu	Leu	Gln	His	Glu	His	Ser	Leu	Lys	Ile	Glu
				885					890					895	
Ala	Arg	Asp	Gln	Ala	Arg	Glu	Glu	Pro	Gln	Leu	Phe	Ser	Thr	Val	Val
			900					905					910		
Val	Lys	Val	Ser	Leu	Glu	Asp	Val	Asn	Asp	Asn	Pro	Pro	Thr	Phe	Ile
		915					920					925			
Pro	Pro	Asn	Tyr	Arg	Val	Lys	Val	Arg	Glu	Asp	Leu	Pro	Glu	Gly	Thr
		930				935					940				
Val	Ile	Met	Trp	Leu	Glu	Ala	His	Asp	Pro	Asp	Leu	Gly	Gln	Ser	Gly
945					950					955					960
Gln	Val	Arg	Tyr	Ser	Leu	Leu	Asp	His	Gly	Glu	Gly	Asn	Phe	Asp	Val
				965					970					975	
Asp	Lys	Leu	Ser	Gly	Ala	Val	Arg	Ile	Val	Gln	Gln	Leu	Asp	Phe	Glu
			980					985					990		
Lys	Lys	Gln	Val	Tyr	Asn	Leu	Thr	Val	Arg	Ala	Lys	Asp	Lys	Gly	Lys
		995				1000						1005			
Pro	Val	Ser	Leu	Ser	Ser	Thr	Cys	Tyr	Val	Glu	Val	Glu	Val	Val	Asp
	1010				1015					1020					
Val	Asn	Glu	Asn	Leu	His	Pro	Pro	Val	Phe	Ser	Ser	Phe	Val	Glu	Lys
1025				1030					1035					1040	
Gly	Thr	Val	Lys	Glu	Asp	Ala	Pro	Val	Gly	Ser	Leu	Val	Met	Thr	Val
			1045					1050					1055		
Ser	Ala	His	Asp	Glu	Asp	Ala	Gly	Arg	Asp	Gly	Glu	Ile	Arg	Tyr	Ser
			1060				1065						1070		
Ile	Arg	Asp	Gly	Ser	Gly	Val	Gly	Val	Phe	Lys	Ile	Gly	Glu	Glu	Thr
	1075				1080							1085			
Gly	Val	Ile	Glu	Thr	Ser	Asp	Arg	Leu	Asp	Arg	Glu	Ser	Thr	Ser	His
	1090				1095					1100					
Tyr	Trp	Leu	Thr	Val	Phe	Ala	Thr	Asp	Gln	Gly	Val	Val	Pro	Leu	Ser
1105				1110					1115				1120		
Ser	Phe	Ile	Glu	Ile	Tyr	Ile	Glu	Val	Glu	Asp	Val	Asn	Asp	Asn	Ala

1125	1130	1135
Pro Gln Thr Ser Glu Pro Val Tyr Tyr	Pro Glu Ile Met Glu Asn Ser	
1140	1145	1150
Pro Lys Asp Val Ser Val Val Gln Ile Glu Ala Phe Asp	Pro Asp Ser	
1155	1160	1165
Ser Ser Asn Asp Lys Leu Met Tyr Lys Ile Thr Ser Gly Asn Pro Gln		
1170	1175	1180
Gly Phe Phe Ser Ile His Pro Lys Thr Gly Leu Ile Thr Thr Thr Ser		
1185	1190	1195
Arg Lys Leu Asp Arg Glu Gln Gln Asp Glu His Ile Leu Glu Val Thr		
1205	1210	1215
Val Thr Asp Asn Gly Ser Pro Pro Lys Ser Thr Ile Ala Arg Val Ile		
1220	1225	1230
Val Lys Ile Leu Asp Glu Asn Asp Asn Lys Pro Gln Phe Leu Gln Lys		
1235	1240	1245
Phe Tyr Lys Ile Arg Leu Pro Glu Arg Glu Lys Pro Asp Arg Glu Arg		
1250	1255	1260
Asn Ala Arg Arg Glu Pro Leu Tyr Arg Val Ile Ala Thr Asp Lys Asp		
1265	1270	1275
Glu Gly Pro Asn Ala Glu Ile Ser Tyr Ser Ile Glu Asp Gly Asn Glu		
1285	1290	1295
His Gly Lys Phe Phe Ile Glu Pro Lys Thr Gly Val Val Ser Ser Lys		
1300	1305	1310
Arg Phe Ser Ala Ala Gly Glu Tyr Asp Ile Leu Ser Ile Lys Ala Val		
1315	1320	1325
Asp Asn Gly Arg Pro Gln Lys Ser Ser Thr Thr Arg Leu His Ile Glu		
1330	1335	1340
Trp Ile Ser Lys Pro Lys Gln Ser Leu Glu Pro Ile Ser Phe Glu Glu		
1345	1350	1355
Ser Phe Phe Thr Phe Thr Val Met Glu Ser Asp Pro Val Ala His Met		
1365	1370	1375
Ile Gly Val Ile Ser Val Glu Pro Pro Gly Ile Pro Leu Trp Phe Asp		
1380	1385	1390
Ile Thr Gly Gly Asn Tyr Asp Ser His Phe Asp Val Asp Lys Gly Thr		
1395	1400	1405
Gly Thr Ile Ile Val Ala Lys Pro Leu Asp Ala Glu Gln Lys Ser Asn		
1410	1415	1420
Tyr Asn Leu Thr Val Glu Ala Thr Asp Gly Thr Thr Thr Ile Leu Thr		

1425	1430	1435	1440
Gln Val Phe Ile Lys Val Ile Asp Thr Asn Asp His Arg Pro Gln Phe	1445	1450	1455
Ser Thr Ser Lys Tyr Glu Val Val Ile Pro Glu Asp Thr Ala Pro Glu	1460	1465	1470
Thr Glu Ile Leu Gln Ile Ser Ala Val Asp Gln Asp Glu Lys Asn Lys	1475	1480	1485
Leu Ile Tyr Thr Leu Gln Ser Ser Arg Asp Pro Leu Ser Leu Lys Lys	1490	1495	1500
Phe Arg Leu Asp Pro Ala Thr Gly Ser Leu Tyr Thr Ser Glu Lys Leu	1505	1510	1515
Asp His Glu Ala Val Ser Pro Ala His Leu Thr Val Met Val Arg Asp	1525	1530	1535
Gln Asp Val Pro Val Lys Arg Asn Phe Ala Arg Ile Val Val Asn Val	1540	1545	1550
Ser Asp Thr Asn Asp His Ala Pro Trp Phe Thr Ala Ser Ser Tyr Lys	1555	1560	1565
Gly Arg Val Tyr Glu Ser Ala Ala Val Gly Ser Val Val Leu Gln Val	1570	1575	1580
Thr Ala Leu Asp Lys Asp Lys Gly Lys Asn Ala Glu Val Leu Tyr Ser	1585	1590	1595
Ile Glu Ser Gly Asn Ile Gly Asn Ile Gly Asn Ser Phe Met Ile Asp	1605	1610	1615
Pro Val Leu Gly Ser Ile Lys Thr Ala Lys Glu Leu Asp Arg Ser Asn	1620	1625	1630
Gln Ala Glu Tyr Asp Leu Met Val Lys Ala Thr Asp Lys Gly Ser Pro	1635	1640	1645
Pro Met Ser Glu Ile Thr Ser Val Arg Ile Phe Val Thr Ile Ala Asp	1650	1655	1660
Asn Ala Ser Pro Lys Phe Thr Ser Lys Glu Tyr Ser Val Glu Leu Ser	1665	1670	1675
Glu Thr Val Ser Ile Gly Ser Phe Val Gly Met Val Thr Ala His Ser	1685	1690	1695
Gln Ser Ser Val Val Tyr Glu Ile Lys Asp Gly Asn Thr Gly Asp Ala	1700	1705	1710
Phe Asp Ile Asn Pro His Ser Gly Thr Ile Ile Thr Gln Lys Ala Leu	1715	1720	1725
Asp Phe Glu Thr Leu Pro Ile Tyr Thr Leu Ile Ile Gln Gly Thr Asn			

1730	1735	1740
Met Ala Gly Leu Ser Thr Asn Thr Thr Val Leu Val His Leu Gln Asp 1745	1750	1755 1760
Glu Asn Asp Asn Ala Pro Val Phe Met Gln Ala Glu Tyr Thr Gly Leu 1765	1770	1775
Ile Ser Glu Ser Ala Ser Ile Asn Ser Val Val Leu Thr Asp Arg Asn 1780	1785	1790
Val Pro Leu Val Ile Arg Ala Ala Asp Ala Asp Lys Asp Ser Asn Ala 1795	1800	1805
Leu Leu Val Tyr His Ile Val Glu Pro Ser Val His Thr Tyr Phe Ala 1810	1815	1820
Ile Asp Ser Ser Thr Gly Ala Ile His Thr Val Leu Ser Leu Asp Tyr 1825	1830	1835 1840
Glu Glu Thr Ser Ile Phe His Phe Thr Val Gln Val His Asp Met Gly 1845	1850	1855
Thr Pro Arg Leu Phe Ala Glu Tyr Ala Ala Asn Val Thr Val His Val 1860	1865	1870
Ile Asp Ile Asn Asp Cys Pro Pro Val Phe Ala Lys Pro Leu Tyr Glu 1875	1880	1885
Ala Ser Leu Leu Leu Pro Thr Tyr Lys Gly Val Lys Val Ile Thr Val 1890	1895	1900
Asn Ala Thr Asp Ala Asp Ser Ser Ala Phe Ser Gln Leu Ile Tyr Ser 1905	1910	1915 1920
Ile Thr Glu Gly Asn Ile Gly Glu Lys Phe Ser Met Asp Tyr Lys Thr 1925	1930	1935
Gly Ala Leu Thr Val Gln Asn Thr Thr Gln Leu Arg Ser Arg Tyr Glu 1940	1945	1950
Leu Thr Val Arg Ala Ser Asp Gly Arg Phe Ala Gly Leu Thr Ser Val 1955	1960	1965
Lys Ile Asn Val Lys Glu Ser Lys Glu Ser His Leu Lys Phe Thr Gln 1970	1975	1980
Asp Val Tyr Ser Ala Val Val Lys Glu Asn Ser Thr Glu Ala Glu Thr 1985	1990	1995 2000
Leu Ala Val Ile Thr Ala Ile Gly Ser Pro Ile Asn Glu Pro Leu Phe 2005	2010	2015
Tyr His Ile Leu Asn Pro Asp Arg Arg Phe Lys Ile Ser Arg Thr Ser 2020	2025	2030
Gly Val Leu Ser Thr Thr Gly Thr Pro Phe Asp Arg Glu Gln Gln Glu		

2035	2040	2045
Ala Phe Asp Val Val Val Glu Val Ile Glu Glu His Lys Pro Ser Ala 2050	2055	2060
Val Ala His Val Val Val Lys Val Ile Val Glu Asp Gln Asn Asp Asn 2065	2070	2075 2080
Ala Pro Val Phe Val Asn Leu Pro Tyr Tyr Ala Val Val Lys Val Asp 2085	2090	2095
Thr Glu Val Gly His Val Ile Arg Tyr Val Thr Ala Val Asp Arg Asp 2100	2105	2110
Ser Gly Arg Asn Gly Glu Val His Tyr Tyr Leu Lys Glu His His Glu 2115	2120	2125
His Phe Gln Ile Gly Pro Leu Gly Glu Ile Ser Leu Lys Lys Gln Phe 2130	2135	2140
Glu Leu Asp Thr Leu Asn Lys Glu Tyr Leu Val Thr Val Val Ala Lys 2145	2150	2155 2160
Asp Gly Gly Asn Pro Ala Phe Ser Ala Glu Val Ile Val Pro Ile Thr 2165	2170	2175
Val Met Asn Lys Ala Met Pro Val Phe Glu Lys Pro Phe Tyr Ser Ala 2180	2185	2190
Glu Ile Ala Glu Ser Ile Gln Val His Ser Pro Val Val His Val Gln 2195	2200	2205
Ala Asn Ser Pro Glu Gly Leu Lys Val Phe Tyr Ser Ile Thr Asp Gly 2210	2215	2220
Asp Pro Phe Ser Gln Phe Thr Ile Asn Phe Asn Thr Gly Val Ile Asn 2225	2230	2235 2240
Val Ile Ala Pro Leu Asp Phe Glu Ala His Pro Ala Tyr Lys Leu Ser 2245	2250	2255
Ile Arg Ala Thr Asp Ser Leu Thr Gly Ala His Ala Glu Val Phe Val 2260	2265	2270
Asp Ile Ile Val Asp Asp Ile Asn Asp Asn Pro Pro Val Phe Ala Gln 2275	2280	2285
Gln Ser Tyr Ala Val Thr Leu Ser Glu Ala Ser Val Ile Gly Thr Ser 2290	2295	2300
Val Val Gln Val Arg Ala Thr Asp Ser Asp Ser Glu Pro Asn Arg Gly 2305	2310	2315 2320
Ile Ser Tyr Gln Met Phe Gly Asn His Ser Lys Ser His Asp His Phe 2325	2330	2335
His Val Asp Ser Ser Thr Gly Leu Ile Ser Leu Leu Arg Thr Leu Asp		



2340	2345	2350
Tyr Glu Gln Ser Arg Gln His Thr Ile Phe Val Arg Ala Val Asp Gly		
2355	2360	2365
Gly Met Pro Thr Leu Ser Ser Asp Val Ile Val Thr Val Asp Val Thr		
2370	2375	2380
Asp Leu Asn Gly Asn Pro Pro Leu Phe Glu Gln Gln Ile Tyr Glu Ala		
2385	2390	2395
Arg Ile Ser Glu His Ala Pro His Gly His Phe Val Thr Cys Val Lys		
2405	2410	2415
Ala Tyr Asp Ala Asp Ser Ser Asp Ile Asp Lys Leu Gln Tyr Ser Ile		
2420	2425	2430
Leu Ser Gly Asn Asp His Lys His Phe Val Ile Asp Ser Ala Thr Gly		
2435	2440	2445
Ile Ile Thr Leu Ser Asn Leu His Arg His Ala Leu Lys Pro Phe Tyr		
2450	2455	2460
Ser Leu Asn Leu Ser Val Ser Asp Gly Val Phe Arg Ser Ser Thr Gln		
2465	2470	2475
Val His Val Thr Val Ile Gly Gly Asn Leu His Ser Pro Ala Phe Leu		
2485	2490	2495
Gln Asn Glu Tyr Glu Val Glu Leu Ala Glu Asn Ala Pro Leu His Thr		
2500	2505	2510
Leu Val Met Glu Val Lys Thr Thr Asp Gly Asp Ser Gly Ile Tyr Gly		
2515	2520	2525
His Val Thr Tyr His Ile Val Asn Asp Phe Ala Lys Asp Arg Phe Tyr		
2530	2535	2540
Ile Asn Glu Arg Gly Gln Ile Phe Thr Leu Glu Lys Leu Asp Arg Glu		
2545	2550	2555
Thr Pro Ala Glu Lys Val Ile Ser Val Arg Leu Met Ala Lys Asp Ala		
2565	2570	2575
Gly Gly Lys Val Ala Phe Cys Thr Val Asn Val Ile Leu Thr Asp Asp		
2580	2585	2590
Asn Asp Asn Ala Pro Gln Phe Arg Ala Thr Lys Tyr Glu Val Asn Ile		
2595	2600	2605
Gly Ser Ser Ala Ala Lys Gly Thr Ser Val Val Lys Ser Ala Ser Asp		
2610	2615	2620
Ala Asp Glu Gly Ser Asn Ala Asp Ile Thr Tyr Ala Ile Glu Ala Asp		
2625	2630	2635
Ser Glu Ser Val Lys Glu Asn Leu Glu Ile Asn Lys Leu Ser Gly Val		

2645					2650					2655				
Ile Thr Thr Lys Glu Ser Leu	Ile Gly Leu Glu Asn Glu Phe Phe Thr													
2660	2665	2670												
Phe Phe Val Arg Ala Val Asp Asn Gly Ser Pro Ser Lys Glu Ser Val														
2675	2680	2685												
Val Leu Val Tyr Val Lys Ile Leu Pro Pro Glu Met Gln Leu Pro Lys														
2690	2695	2700												
Phe Ser Glu Pro Phe Tyr Thr Phe Thr Val Ser Glu Asp Val Pro Val														
2705	2710	2715	2720											
Gly Thr Glu Ile Asp Leu Ile Arg Ala Glu His Ser Gly Thr Val Leu														
2725	2730	2735												
Tyr Ser Leu Val Lys Gly Asn Thr Pro Glu Ser Asn Arg Asp Glu Ser														
2740	2745	2750												
Phe Val Ile Asp Arg Gln Ser Gly Arg Leu Lys Leu Glu Lys Ser Leu														
2755	2760	2765												
Asp His Glu Thr Thr Lys Trp Tyr Gln Phe Ser Ile Leu Ala Arg Cys														
2770	2775	2780												
Thr Gln Asp Asp His Glu Met Val Ala Ser Val Asp Val Ser Ile Gln														
2785	2790	2795	2800											
Val Lys Asp Ala Asn Asp Asn Ser Pro Val Phe Glu Ser Ser Pro Tyr														
2805	2810	2815												
Glu Ala Phe Ile Val Glu Asn Leu Pro Gly Gly Ser Arg Val Ile Gln														
2820	2825	2830												
Ile Arg Ala Ser Asp Ala Asp Ser Gly Thr Asn Gly Gln Val Met Tyr														
2835	2840	2845												
Ser Leu Asp Gln Ser Gln Ser Val Glu Val Ile Glu Ser Phe Ala Ile														
2850	2855	2860												
Asn Met Glu Thr Gly Trp Ile Thr Thr Leu Lys Glu Leu Asp His Glu														
2865	2870	2875	2880											
Lys Arg Asp Asn Tyr Gln Ile Lys Val Val Ala Ser Asp His Gly Glu														
2885	2890	2895												
Lys Ile Gln Leu Ser Ser Thr Ala Ile Val Asp Val Thr Val Thr Asp														
2900	2905	2910												
Val Asn Asp Ser Pro Pro Arg Phe Thr Ala Glu Ile Tyr Lys Gly Thr														
2915	2920	2925												
Val Ser Glu Asp Asp Pro Gln Gly Gly Val Ile Ala Ile Leu Ser Thr														
2930	2935	2940												
Thr Asp Ala Asp Ser Glu Glu Ile Asn Arg Gln Val Thr Tyr Phe Ile														

2945	2950	2955	2960
Thr Gly Gly Asp Pro Leu Gly Gln Phe Ala Val Glu Thr Ile Gln Asn	2965	2970	2975
Glu Trp Lys Val Tyr Val Lys Lys Pro Leu Asp Arg Glu Lys Arg Asp	2980	2985	2990
Asn Tyr Leu Leu Thr Ile Thr Ala Thr Asp Gly Thr Phe Ser Ser Lys	2995	3000	3005
Ala Ile Val Glu Val Lys Val Leu Asp Ala Asn Asp Asn Ser Pro Val	3010	3015	3020
Cys Glu Lys Thr Leu Tyr Ser Asp Thr Ile Pro Glu Asp Val Leu Pro	3025	3030	3035
Gly Lys Leu Ile Met Gln Ile Ser Ala Thr Asp Ala Asp Ile Arg Ser	3045	3050	3055
Asn Ala Glu Ile Thr Tyr Thr Leu Leu Gly Ser Gly Ala Glu Lys Phe	3060	3065	3070
Lys Leu Asn Pro Asp Thr Gly Glu Leu Lys Thr Ser Thr Pro Leu Asp	3075	3080	3085
Arg Glu Glu Gln Ala Val Tyr His Leu Leu Val Arg Ala Thr Asp Gly	3090	3095	3100
Gly Gly Arg Phe Cys Gln Ala Ser Ile Val Val Thr Leu Glu Asp Val	3105	3110	3115
Asn Asp Asn Ala Pro Glu Phe Ser Ala Asp Pro Tyr Ala Ile Thr Val	3125	3130	3135
Phe Glu Asn Thr Glu Pro Gly Thr Leu Leu Thr Arg Val Gln Ala Thr	3140	3145	3150
Asp Ala Asp Ala Gly Leu Asn Arg Lys Ile Leu Tyr Ser Leu Ile Asp	3155	3160	3165
Ser Ala Asp Gly Gln Phe Ser Ile Asn Glu Leu Ser Gly Ile Ile Gln	3170	3175	3180
Leu Glu Lys Pro Leu Asp Arg Glu Leu Gln Ala Val Tyr Thr Leu Ser	3185	3190	3195
Leu Lys Ala Val Asp Gln Gly Leu Pro Arg Arg Leu Thr Ala Thr Gly	3205	3210	3215
Thr Val Ile Val Ser Val Leu Asp Ile Asn Asp Asn Pro Pro Val Phe	3220	3225	3230
Glu Tyr Arg Glu Tyr Gly Ala Thr Val Ser Glu Asp Ile Leu Val Gly	3235	3240	3245
Thr Glu Val Leu Gln Val Tyr Ala Ala Ser Arg Asp Ile Glu Ala Asn			

3250	3255	3260
Ala Glu Ile Thr Tyr Ser Ile Ile Ser Gly Asn Glu His Gly Lys Phe		
3265	3270	3275 3280
Ser Ile Asp Ser Lys Thr Gly Ala Val Phe Ile Ile Glu Asn Leu Asp		
	3285	3290 3295
Tyr Glu Ser Ser His Glu Tyr Tyr Leu Thr Val Glu Ala Thr Asp Gly		
	3300	3305 3310
Gly Thr Pro Ser Leu Ser Asp Val Ala Thr Val Asn Val Asn Val Thr		
	3315	3320 3325
Asp Ile Asn Asp Asn Thr Pro Val Phe Ser Gln Asp Thr Tyr Thr Thr		
	3330	3335 3340
Val Ile Ser Glu Asp Ala Val Leu Glu Gln Ser Val Ile Thr Val Met		
3345	3350	3355 3360
Ala Asp Asp Ala Asp Gly Pro Ser Asn Ser His Ile His Tyr Ser Ile		
	3365	3370 3375
Ile Asp Gly Asn Gln Gly Ser Ser Phe Thr Ile Asp Pro Val Arg Gly		
	3380	3385 3390
Glu Val Lys Val Thr Lys Leu Leu Asp Arg Glu Thr Ile Ser Gly Tyr		
	3395	3400 3405
Thr Leu Thr Val Gln Ala Ser Asp Asn Gly Ser Pro Pro Arg Val Asn		
	3410	3415 3420
Thr Thr Thr Val Asn Ile Asp Val Ser Asp Val Asn Asp Asn Ala Pro		
3425	3430	3435 3440
Val Phe Ser Arg Gly Asn Tyr Ser Val Ile Ile Gln Glu Asn Lys Pro		
	3445	3450 3455
Val Gly Phe Ser Val Leu Gln Leu Val Val Thr Asp Glu Asp Ser Ser		
	3460	3465 3470
His Asn Gly Pro Pro Phe Phe Phe Thr Ile Val Thr Gly Asn Asp Glu		
	3475	3480 3485
Lys Ala Phe Glu Val Asn Pro Gln Gly Val Leu Leu Thr Ser Ser Ala		
	3490	3495 3500
Ile Lys Arg Lys Glu Lys Asp His Tyr Leu Leu Gln Val Lys Val Ala		
3505	3510	3515 3520
Asp Asn Gly Lys Pro Gln Leu Ser Ser Leu Thr Tyr Ile Asp Ile Arg		
	3525	3530 3535
Val Ile Glu Glu Ser Ile Tyr Pro Pro Ala Ile Leu Pro Leu Glu Ile		
	3540	3545 3550
Phe Ile Thr Ser Ser Gly Glu Glu Tyr Ser Gly Gly Val Ile Gly Lys		

3555	3560	3565
Ile His Ala Thr Asp Gln Asp Val Tyr Asp Thr Leu Thr Tyr Ser Leu		
3570	3575	3580
Asp Pro Gln Met Asp Asn Leu Phe Ser Val Ser Ser Thr Gly Gly Lys		
3585	3590	3595 3600
Leu Ile Ala His Lys Lys Leu Asp Ile Gly Gln Tyr Leu Leu Asn Val		
3605	3610	3615
Ser Val Thr Asp Gly Lys Phe Thr Thr Val Ala Asp Ile Thr Val His		
3620	3625	3630
Ile Arg Gln Val Thr Gln Glu Met Leu Asn His Thr Ile Ala Ile Arg		
3635	3640	3645
Phe Ala Asn Leu Thr Pro Glu Glu Phe Val Gly Asp Tyr Trp Arg Asn		
3650	3655	3660
Phe Gln Arg Ala Leu Arg Asn Ile Leu Gly Val Arg Arg Asn Asp Ile		
3665	3670	3675 3680
Gln Ile Val Ser Leu Gln Ser Ser Glu Pro His Pro His Leu Asp Val		
3685	3690	3695
Leu Leu Phe Val Glu Lys Pro Gly Ser Ala Gln Ile Ser Thr Lys Gln		
3700	3705	3710
Leu Leu His Lys Ile Asn Ser Ser Val Thr Asp Ile Glu Glu Ile Ile		
3715	3720	3725
Gly Val Arg Ile Leu Asn Val Phe Gln Lys Leu Cys Ala Gly Leu Asp		
3730	3735	3740
Cys Pro Trp Lys Phe Cys Asp Glu Lys Val Ser Val Asp Glu Ser Val		
3745	3750	3755 3760
Met Ser Thr His Ser Thr Ala Arg Leu Ser Phe Val Thr Pro Arg His		
3765	3770	3775
His Arg Ala Ala Val Cys Leu Cys Lys Glu Gly Arg Cys Pro Pro Val		
3780	3785	3790
His His Gly Cys Glu Asp Asp Pro Cys Pro Glu Gly Ser Glu Cys Val		
3795	3800	3805
Ser Asp Pro Trp Glu Glu Lys His Thr Cys Val Cys Pro Ser Gly Arg		
3810	3815	3820
Phe Gly Gln Cys Pro Gly Ser Ser Ser Met Thr Leu Thr Gly Asn Ser		
3825	3830	3835 3840
Tyr Val Lys Tyr Arg Leu Thr Glu Asn Glu Asn Lys Leu Glu Met Lys		
3845	3850	3855
Leu Thr Met Arg Leu Arg Thr Tyr Ser Thr His Ala Val Val Met Tyr		

3860	3865	3870
Ala Arg Gly Thr Asp Tyr Ser Ile Leu Glu Ile His His Gly Arg Leu 3875	3880	3885
Gln Tyr Lys Phe Asp Cys Gly Ser Gly Pro Gly Ile Val Ser Val Gln 3890	3895	3900
Ser Ile Gln Val Asn Asp Gly Gln Trp His Ala Val Ala Leu Glu Val 3905	3910	3915 3920
Asn Gly Asn Tyr Ala Arg Leu Val Leu Asp Gln Val His Thr Ala Ser 3925	3930	3935
Gly Thr Ala Pro Gly Thr Leu Lys Thr Leu Asn Leu Asp Asn Tyr Val 3940	3945	3950
Phe Phe Gly Gly His Ile Arg Gln Gln Gly Thr Arg His Gly Arg Ser 3955	3960	3965
Pro Gln Val Gly Asn Gly Phe Arg Gly Cys Met Asp Ser Ile Tyr Leu 3970	3975	3980
Asn Gly Gln Glu Leu Pro Leu Asn Ser Lys Pro Arg Ser Tyr Ala His 3985	3990	3995 4000
Ile Glu Glu Ser Val Asp Val Ser Pro Gly Cys Phe Leu Thr Ala Thr 4005	4010	4015
Glu Asp Cys Ala Ser Asn Pro Cys Gln Asn Gly Gly Val Cys Asn Pro 4020	4025	4030
Ser Pro Ala Gly Gly Tyr Tyr Cys Lys Cys Ser Ala Leu Tyr Ile Gly 4035	4040	4045
Thr His Cys Glu Ile Ser Val Asn Pro Cys Ser Ser Asn Pro Cys Leu 4050	4055	4060
Tyr Gly Gly Thr Cys Val Val Asp Asn Gly Gly Phe Val Cys Gln Cys 4065	4070	4075 4080
Arg Gly Leu Tyr Thr Gly Gln Arg Cys Gln Leu Ser Pro Tyr Cys Lys 4085	4090	4095
Asp Glu Pro Cys Lys Asn Gly Gly Thr Cys Phe Asp Ser Leu Asp Gly 4100	4105	4110
Ala Val Cys Gln Cys Asp Ser Gly Phe Arg Gly Glu Arg Cys Gln Ser 4115	4120	4125
Asp Ile Asp Glu Cys Ser Gly Asn Pro Cys Leu His Gly Ala Leu Cys 4130	4135	4140
Glu Asn Thr His Gly Ser Tyr His Cys Asn Cys Ser His Glu Tyr Arg 4145	4150	4155 4160
Gly Arg His Cys Glu Asp Ala Ala Pro Asn Gln Tyr Val Ser Thr Pro		

4165	4170	4175
Trp Asn Ile Gly Leu Ala Glu Gly Ile Gly Ile Val Val Phe Val Ala 4180	4185	4190
Gly Ile Phe Leu Leu Val Val Val Phe Val Leu Cys Arg Lys Met Ile 4195	4200	4205
Ser Arg Lys Lys Lys His Gln Ala Glu Pro Lys Asp Lys His Leu Gly 4210	4215	4220
Pro Ala Thr Ala Phe Leu Gln Arg Pro Tyr Phe Asp Ser Lys Leu Asn 4225	4230	4235 4240
Lys Asn Ile Tyr Ser Asp Ile Pro Pro Gln Val Pro Val Arg Pro Ile 4245	4250	4255
Ser Tyr Thr Pro Ser Ile Pro Ser Asp Ser Arg Asn Asn Leu Asp Arg 4260	4265	4270
Asn Ser Phe Glu Gly Ser Ala Ile Pro Glu His Pro Glu Phe Ser Thr 4275	4280	4285
Phe Asn Pro Glu Ser Val His Gly His Arg Lys Ala Val Ala Val Cys 4290	4295	4300
Ser Val Ala Pro Asn Leu Pro Pro Pro Pro Pro Ser Asn Ser Pro Ser 4305	4310	4315 4320
Asp Ser Asp Ser Ile Gln Lys Pro Ser Trp Asp Phe Asp Tyr Asp Thr 4325	4330	4335
Lys Val Val Asp Leu Asp Pro Cys Leu Ser Lys Lys Pro Leu Glu Glu 4340	4345	4350
Lys Pro Ser Gln Pro Tyr Ser Ala Arg Glu Ser Leu Ser Glu Val Gln 4355	4360	4365
Ser Leu Ser Ser Phe Gln Ser Glu Ser Cys Asp Asp Asn Gly Tyr His 4370	4375	4380
Trp Asp Thr Ser Asp Trp Met Pro Ser Val Pro Leu Pro Asp Ile Gln 4385	4390	4395 4400
Glu Phe Pro Asn Tyr Glu Val Ile Asp Glu Gln Thr Pro Leu Tyr Ser 4405	4410	4415
Ala Asp Pro Asn Ala Ile Asp Thr Asp Tyr Tyr Pro Gly Gly Tyr Asp 4420	4425	4430
Ile Glu Ser Asp Phe Pro Pro Pro Pro Glu Asp Phe Pro Ala Ala Asp 4435	4440	4445
Glu Leu Pro Pro Leu Pro Pro Glu Phe Ser Asn Gln Phe Glu Ser Ile 4450	4455	4460
His Pro Pro Arg Asp Met Pro Ala Ala Gly Ser Leu Gly Ser Ser Ser		

4465                      4470                      4475                      4480  
 Arg Asn Arg Gln Arg Phe Asn Leu Asn Gln Tyr Leu Pro Asn Phe Tyr  
                          4485                      4490                      4495  
 Pro Leu Asp Met Ser Glu Pro Gln Thr Lys Gly Thr Gly Glu Asn Ser  
                          4500                      4505                      4510  
 Thr Cys Arg Glu Pro His Ala Pro Tyr Pro Pro Gly Tyr Gln Arg His  
                          4515                      4520                      4525  
 Phe Glu Ala Pro Ala Val Glu Ser Met Pro Met Ser Val Tyr Ala Ser  
                          4530                      4535                      4540  
 Thr Ala Ser Cys Ser Asp Val Ser Ala Cys Cys Glu Val Glu Ser Glu  
 4545                      4550                      4555                      4560  
 Val Met Met Ser Asp Tyr Glu Ser Gly Asp Asp Gly His Phe Glu Glu  
                          4565                      4570                      4575  
 Val Thr Ile Pro Pro Leu Asp Ser Gln Gln His Thr Glu Val  
                          4580                      4585                      4590

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 <212> PRT  
 <213> Homo sapiens

<400> 22  
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 Gly Arg Pro Gly Leu Phe Trp Phe Asn Ile Ser Gly Gly Asp Lys Asp  
                           20                          25                          30  
 Met Asp Phe Asp Ile Glu Lys Thr Thr Gly Ser Ile Val Ile Ala Arg  
                           35                          40                          45  
 Pro Leu Asp Thr Arg Arg Arg Ser Asn Tyr Asn Leu Thr Val Glu Val  
                           50                          55                          60  
 Thr Asp Gly Ser Arg Thr Ile Ala Thr Gln Val His Ile Phe Met Ile  
   65                          70                          75                          80  
 Ala Asn Ile Asn His His Arg Pro Gln Phe Leu Glu Thr Arg Tyr Glu  
                           85                          90                          95  
 Val Arg Val Pro Gln Asp Thr Val Pro Gly Val Glu Leu Leu Arg Val  
                           100                          105                          110  
 Gln Ala Ile Asp Gln Asp Lys Gly Lys Ser Leu Ile Tyr Thr Ile His  
                           115                          120                          125  
 Gly Ser Gln Asp Pro Gly Ser Ala Ser Leu Phe Gln Leu Asp Pro Ser  
                           130                          135                          140



Ser Gly Val Leu Val Thr Val Gly Lys Leu Asp Leu Gly Ser Gly Pro  
 145 150 155 160  
 Ser Gln His Thr Leu Thr Val Met Val Arg Asp Gln Glu Ile Pro Ile  
 165 170 175  
 Lys Arg Asn Phe Val Trp Val Thr Ile His Val Glu Asp Gly Asn Leu  
 180 185 190  
 His Pro Pro Arg Phe Thr Gln Leu His Tyr Glu Ala Ser Val Pro Asp  
 195 200 205  
 Thr Ile Ala Pro Gly Thr Glu Leu Leu Gln Val Arg Ala Met Asp Ala  
 210 215 220  
 Asp Arg Gly Val Asn Ala Glu Val His Tyr Ser Leu Leu Lys Gly Asn  
 225 230 235 240  
 Ser Glu Gly Phe Phe Asn Ile Asn Ala Leu Leu Gly Ile Ile Thr Leu  
 245 250 255  
 Ala Gln Lys Leu Asp Gln Ala Asn His Ala Pro His Thr Leu Thr Val  
 260 265 270  
 Lys Ala Glu Asp Gln Gly Ser Pro Gln Trp His Asp Leu Ala Thr Val  
 275 280 285  
 Ile Ile His Val Tyr Pro Ser Asp Arg Ser Ala Pro Ile Phe Ser Lys  
 290 295 300  
 Ser Glu Tyr Phe Val Glu Ile Pro Glu Ser Ile Pro Val Gly Ser Pro  
 305 310 315 320  
 Ile Leu Leu Val Ser Ala Met Ser Pro Ser Glu Val Thr Tyr Glu Leu  
 325 330 335  
 Arg Glu Gly Asn Lys Asp Gly Val Phe Ser Met Asn Ser Tyr Ser Gly  
 340 345 350  
 Leu Ile Ser Thr Gln Lys Lys Leu Asp His Glu Lys Ile Ser Ser Tyr  
 355 360 365  
 Gln Leu Lys Ile Arg Gly Ser Asn Met Ala Gly Ala Phe Thr Asp Val  
 370 375 380  
 Met Val Val Val Asp Ile Ile Asp Glu Asn Asp Asn Ala Pro Met Phe  
 385 390 395 400  
 Leu Lys Ser Thr Phe Val Gly Gln Ile Ser Glu Ala Ala Pro Leu Tyr  
 405 410 415  
 Ser Met Ile Met Asp Lys Asn Asn Asn Pro Phe Val Ile His Ala Ser  
 420 425 430  
 Asp Ser Asp Lys Glu Ala Asn Ser Leu Leu Val Tyr Lys Ile Leu Glu  
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Pro Glu Ala Leu Lys Phe Phe Lys Ile Asp Pro Ser Met Gly Thr Leu  
 450 455 460  
 Thr Ile Val Ser Glu Met Asp Tyr Glu Ser Met Pro Ser Phe Gln Phe  
 465 470 475 480  
 Cys Val Tyr Val His Asp Gln Gly Ser Pro Val Leu Phe Ala Pro Arg  
 485 490 495  
 Pro Ala Gln Val Ile Ile His Val Arg Asp Val Asn Asp Ser Pro Pro  
 500 505 510  
 Arg Phe Ser Glu Gln Ile Tyr Glu Val Ala Ile Val Gly Pro Ile His  
 515 520 525  
 Pro Gly Met Glu Leu Leu Met Val Arg Ala Ser Asp Glu Asp Ser Glu  
 530 535 540  
 Val Asn Tyr Ser Ile Lys Thr Gly Asn Ala Asp Glu Ala Val Thr Ile  
 545 550 555 560  
 His Pro Val Thr Gly Ser Ile Ser Val Leu Asn Pro Ala Phe Leu Gly  
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 Leu Ser Arg Lys Leu Thr Ile Arg Ala Ser Asp Gly Leu Tyr Gln Asp  
 580 585 590  
 Thr Ala Leu Val Lys Ile Ser Leu Thr Gln Val Leu Asp Lys Ser Leu  
 595 600 605  
 Gln Phe Asp Gln Asp Val Tyr Trp Ala Ala Val Lys Glu Asn Leu Gln  
 610 615 620  
 Asp Arg Lys Ala Leu Val Ile Leu Gly Ala Gln Gly Asn His Leu Asn  
 625 630 635 640  
 Asp Thr Leu Ser Tyr Phe Leu Leu Asn Gly Thr Asp Met Phe His Met  
 645 650 655  
 Val Gln Ser Ala Gly Val Leu Gln Thr Arg Gly Val Ala Phe Asp Arg  
 660 665 670  
 Glu Gln Gln Asp Thr His Glu Leu Ala Val Glu Val Arg Asp Asn Arg  
 675 680 685  
 Thr Pro Gln Arg Val Ala Gln Gly Leu Val Arg Val Ser Ile Glu Asp  
 690 695 700  
 Val Asn Asp Asn Pro Pro Lys Phe Lys His Leu Pro Tyr Tyr Thr Ile  
 705 710 715 720  
 Ile Gln Asp Gly Thr Glu Pro Gly Asp Val Leu Phe Gln Val Ser Ala  
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 Thr Asp Glu Asp Leu Gly Thr Asn Gly Ala Val Thr Tyr Glu Phe Ala  
 740 745 750

Glu Asp Tyr Thr Tyr Phe Arg Ile Asp Pro Tyr Leu Gly Asp Ile Ser  
 755 760 765  
 Leu Lys Lys Pro Phe Asp Tyr Gln Ala Leu Asn Lys Tyr His Leu Lys  
 770 775 780  
 Val Ile Ala Arg Asp Gly Gly Thr Pro Ser Leu Gln Ser Glu Glu Glu  
 785 790 795 800  
 Val Leu Val Thr Val Arg Asn Lys Ser Asn Pro Leu Phe Gln Ser Pro  
 805 810 815  
 Tyr Tyr Lys Val Arg Val Pro Glu Asn Ile Thr Leu Tyr Thr Pro Ile  
 820 825 830  
 Leu His Thr Gln Ala Arg Ser Pro Glu Gly Leu Arg Leu Ile Tyr Asn  
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 Ile Val Glu Glu Glu Pro Leu Met Leu Phe Thr Thr Asp Phe Lys Thr  
 850 855 860  
 Gly Val Leu Thr Val Thr Gly Pro Leu Asp Tyr Glu Ser Lys Thr Lys  
 865 870 875 880  
 His Val Phe Thr Val Arg Ala Thr Asp Thr Ala Leu Gly Ser Phe Ser  
 885 890 895  
 Glu Ala Thr Val Glu Val Leu Val Glu Asp Val Asn Asp Asn Pro Pro  
 900 905 910  
 Thr Phe Ser Gln Leu Val Tyr Thr Thr Ser Ile Ser Glu Gly Leu Pro  
 915 920 925  
 Ala Gln Thr Pro Val Ile Gln Leu Leu Ala Ser Asp Gln Asp Ser Gly  
 930 935 940  
 Arg Asn Arg Asp Val Ser Tyr Gln Ile Val Glu Asp Gly Ser Asp Val  
 945 950 955 960  
 Ser Lys Phe Phe Gln Ile Asn Gly Ser Thr Gly Glu Met Ser Thr Val  
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 Gln Glu Leu Asp Tyr Glu Ala Gln Gln His Phe His Val Lys Val Arg  
 980 985 990  
 Ala Met Asp Lys Gly Asp Pro Pro Leu Thr Gly Glu Thr Leu Val Val  
 995 1000 1005  
 Val Asn Val Ser Asp Ile Asn Asp Asn Pro Pro Glu Phe Arg Gln Pro  
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 Gln Tyr Glu Ala Asn Val Ser Glu Leu Ala Thr Cys Gly His Leu Val  
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 Leu Lys Val Gln Ala Ile Asp Pro Asp Ser Arg Asp Thr Ser Arg Leu  
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Glu Tyr Leu Ile Leu Ser Gly Asn Gln Asp Arg His Phe Phe Ile Asn  
 1060 1065 1070  
 Ser Ser Ser Gly Ile Ile Ser Met Phe Asn Leu Cys Lys Lys His Leu  
 1075 1080 1085  
 Asp Ser Ser Tyr Asn Leu Arg Val Gly Ala Ser Asp Gly Val Phe Arg  
 1090 1095 1100  
 Ala Thr Val Pro Val Tyr Ile Asn Thr Thr Asn Ala Asn Lys Tyr Ser  
 1105 1110 1115 1120  
 Pro Glu Phe Gln Gln His Leu Tyr Glu Ala Glu Leu Ala Glu Asn Ala  
 1125 1130 1135  
 Met Val Gly Thr Lys Val Ile Asp Leu Leu Ala Ile Asp Lys Asp Ser  
 1140 1145 1150  
 Gly Pro Tyr Gly Thr Ile Asp Tyr Thr Ile Ile Asn Lys Leu Ala Ser  
 1155 1160 1165  
 Glu Lys Phe Ser Ile Asn Pro Asn Gly Gln Ile Ala Thr Leu Gln Lys  
 1170 1175 1180  
 Leu Asp Arg Glu Asn Ser Thr Glu Arg Val Ile Ala Ile Lys Val Met  
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 Ala Arg Asp Gly Gly Gly Arg Val Ala Phe Cys Thr Val Lys Ile Ile  
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 Leu Thr Asp Glu Asn Asp Asn Pro Pro Gln Phe Lys Ala Ser Glu Tyr  
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 Thr Val Ser Ile Gln Ser Asn Val Ser Lys Asp Ser Pro Val Ile Gln  
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 Val Leu Ala Tyr Asp Ala Asp Glu Gly Gln Asn Ala Asp Val Thr Tyr  
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 Ser Val Asn Pro Glu Asp Leu Val Lys Asp Val Ile Glu Ile Asn Pro  
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 Val Thr Gly Val Val Lys Val Lys Asp Ser Leu Val Gly Leu Glu Asn  
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 Gln Thr Leu Asp Phe Phe Ile Lys Ala Gln Asp Gly Gly Pro Pro His  
 1300 1305 1310  
 Trp Asn Ser Leu Val Pro Val Arg Leu Gln Val Val Pro Lys Lys Val  
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 Ser Leu Pro Lys Phe Ser Glu Pro Leu Tyr Thr Phe Ser Ala Pro Glu  
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 Asp Leu Pro Glu Gly Ser Glu Ile Gly Ile Val Lys Ala Val Ala Ala  
 1345 1350 1355 1360

Gln Asp Pro Val Ile Tyr Ser Leu Val Arg Gly Thr Thr Pro Glu Ser  
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Asn Lys Asp Gly Val Phe Ser Leu Asp Pro Asp Thr Gly Val Ile Lys  
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Val Arg Lys Pro Met Asp His Glu Ser Thr Lys Leu Tyr Gln Ile Asp  
 1395 1400 1405

Val Met Ala His Cys Leu Gln Asn Thr Asp Val Val Ser Leu Val Ser  
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Val Asn Ile Gln Val Gly Asp Val Asn Asp Asn Arg Pro Val Phe Glu  
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Ala Asp Pro Tyr Lys Ala Val Leu Thr Glu Asn Met Pro Val Gly Thr  
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Ser Val Ile Gln Val Thr Ala Ile Asp Lys Asp Thr Gly Arg Asp Gly  
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Gln Val Ser Tyr Arg Leu Ser Ala Asp Pro Gly Ser Asn Val His Glu  
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Leu Phe Ala Ile Asp Ser Glu Ser Gly Trp Ile Thr Thr Leu Gln Glu  
 1490 1495 1500

Leu Asp Cys Glu Thr Cys Gln Thr Tyr His Phe His Val Val Ala Tyr  
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Asp His Gly Gln Thr Ile Gln Leu Ser Ser Gln Ala Leu Val Gln Val  
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Ser Ile Thr Asp Glu Asn Asp Asn Ala Pro Arg Phe Ala Ser Glu Glu  
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Tyr Arg Gly Ser Val Val Glu Asn Ser Glu Pro Gly Glu Leu Val Ala  
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Thr Leu Lys Thr Leu Asp Ala Asp Ile Ser Glu Gln Asn Arg Gln Val  
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Thr Cys Tyr Ile Thr Glu Gly Asp Pro Leu Gly Gln Phe Gly Ile Ser  
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Gln Val Gly Asp Glu Trp Arg Ile Ser Ser Arg Lys Thr Leu Asp Arg  
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Glu His Thr Ala Lys Tyr Leu Leu Arg Val Thr Ala Ser Asp Gly Lys  
 1620 1625 1630

Phe Gln Ala Ser Val Thr Val Glu Ile Phe Val Leu Asp Val Asn Asp  
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Asn Ser Pro Gln Cys Ser Gln Leu Leu Tyr Thr Gly Lys Val His Glu  
 1650 1655 1660

Asp Val Phe Pro Gly His Phe Ile Leu Lys Val Ser Ala Thr Asp Leu  
 1665 1670 1675 1680  
 Asp Thr Asp Thr Asn Ala Gln Ile Thr Tyr Ser Leu His Gly Pro Gly  
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 Ala His Glu Phe Lys Leu Asp Pro His Thr Gly Glu Leu Thr Thr Leu  
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 Thr Ala Leu Asp Arg Glu Arg Lys Asp Val Phe Asn Leu Val Ala Lys  
 1715 1720 1725  
 Ala Thr Asp Gly Gly Gly Arg Ser Cys Gln Ala Asp Ile Thr Leu His  
 1730 1735 1740  
 Val Glu Asp Val Asn Asp Asn Ala Pro Arg Phe Phe Pro Ser His Cys  
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 Ala Val Ala Val Phe Asp Asn Thr Thr Val Lys Thr Pro Val Ala Val  
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 Val Phe Ala Arg Asp Pro Asp Gln Gly Ala Asn Ala Gln Val Val Tyr  
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 Ser Leu Pro Asp Ser Ala Glu Gly His Phe Ser Ile Asp Ala Thr Thr  
 1795 1800 1805  
 Gly Val Ile Arg Leu Glu Lys Pro Leu Gln Val Arg Pro Gln Ala Pro  
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 1825 1830 1835 1840  
 Ser Thr Leu Gly Thr Val Thr Val Ser Val Val Gly Leu Glu Asp Tyr  
 1845 1850 1855  
 Leu Pro Val Phe Leu Asn Thr Glu His Ser Val Gln Val Pro Glu Asp  
 1860 1865 1870  
 Ala Pro Pro Gly Thr Glu Val Leu Gln Leu Ala Thr Leu Thr Arg Pro  
 1875 1880 1885  
 Gly Ala Glu Lys Thr Gly Tyr Arg Val Val Ser Gly Asn Glu Gln Gly  
 1890 1895 1900  
 Arg Phe Arg Leu Asp Ala Arg Thr Gly Ile Leu Tyr Val Asn Ala Ser  
 1905 1910 1915 1920  
 Leu Asp Phe Glu Thr Ser Pro Lys Tyr Phe Leu Ser Ile Glu Cys Ser  
 1925 1930 1935  
 Arg Lys Ser Ser Ser Ser Leu Ser Asp Val Thr Thr Val Met Val Asn  
 1940 1945 1950  
 Ile Thr Asp Val Asn Glu His Arg Pro Gln Phe Pro Gln Asp Pro Tyr  
 1955 1960 1965

Ser Thr Arg Val Leu Glu Asn Ala Leu Val Gly Asp Val Ile Leu Thr  
 1970 1975 1980  
 Val Ser Ala Thr Asp Glu Asp Gly Pro Leu Asn Ser Asp Ile Thr Tyr  
 1985 1990 1995 2000  
 Ser Leu Ile Gly Gly Asn Gln Leu Gly His Phe Thr Ile His Pro Lys  
 2005 2010 2015  
 Lys Gly Glu Leu Gln Val Ala Lys Ala Leu Asp Arg Glu Gln Ala Ser  
 2020 2025 2030  
 Ser Tyr Ser Leu Lys Leu Arg Ala Thr Asp Ser Gly Gln Pro Pro Leu  
 2035 2040 2045  
 His Glu Asp Thr Asp Ile Ala Ile Gln Val Ala Asp Val Asn Asp Asn  
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 Ser Pro Ile Gly Ser Lys Val Leu Gln Leu Ile Leu Ser Asp Pro Asp  
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 Ser Pro Glu Asn Gly Pro Pro Tyr Ser Phe Arg Ile Thr Lys Gly Asn  
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 Glu Gly Leu Ser Arg Arg Ala Gln Glu Trp Tyr Gln Leu Gln Ile Gln  
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 Ala Ser Asp Ser Gly Ile Pro Pro Leu Ser Ser Leu Thr Ser Val Arg  
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 Val His Val Thr Glu Gln Ser His Tyr Ala Pro Ser Ala Leu Pro Leu  
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 Glu Ile Phe Ile Thr Val Gly Glu Asp Glu Phe Gln Gly Gly Met Val  
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 Gly Lys Ile His Ala Thr Asp Arg Asp Pro Gln Asp Thr Leu Thr Tyr  
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 Ser Leu Ala Glu Glu Glu Thr Leu Gly Arg His Phe Ser Val Gly Ala  
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 Pro Asp Gly Lys Ile Ile Ala Ala Gln Gly Leu Pro Arg Gly His Tyr  
 2225 2230 2235 2240  
 Ser Phe Asn Val Thr Val Ser Asp Gly Thr Phe Thr Thr Thr Ala Gly  
 2245 2250 2255  
 Val His Val Tyr Val Trp His Val Gly Gln Glu Ala Leu Gln Gln Ala  
 2260 2265 2270

Met Trp Met Gly Phe Tyr Gln Leu Thr Pro Glu Glu Leu Val Ser Asp  
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His Trp Arg Asn Leu Gln Arg Phe Leu Ser His Lys Leu Asp Ile Lys  
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Arg Ala Asn Ile His Leu Ala Ser Leu Gln Pro Ala Glu Ala Val Ala  
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Gly Val Asp Val Leu Leu Val Phe Glu Gly His Ser Gly Thr Phe Tyr  
 2325 2330 2335

Glu Phe Gln Glu Leu Ala Ser Ile Ile Thr His Ser Ala Lys Glu Met  
 2340 2345 2350

Glu His Ser Val Gly Val Gln Met Arg Ser Ala Met Pro Met Val Pro  
 2355 2360 2365

Cys Gln Gly Pro Thr Cys Gln Gly Gln Ile Cys His Asn Thr Val His  
 2370 2375 2380

Leu Asp Pro Lys Val Gly Pro Thr Tyr Ser Thr Ala Arg Leu Ser Ile  
 2385 2390 2395 2400

Leu Thr Pro Arg His His Leu Gln Arg Ser Cys Ser Cys Asn Gly Thr  
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Ala Thr Arg Phe Ser Gly Gln Ser Tyr Val Arg Tyr Arg Ala Pro Ala  
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Ala Arg Asn Trp His Ile His Phe Tyr Leu Lys Thr Leu Gln Pro Gln  
 2435 2440 2445

Ala Ile Leu Leu Phe Thr Asn Glu Thr Ala Ser Val Ser Leu Lys Leu  
 2450 2455 2460

Ala Ser Gly Val Pro Gln Leu Glu Tyr His Cys Leu Gly Gly Phe Tyr  
 2465 2470 2475 2480

Gly Asn Leu Ser Ser Gln Arg His Val Asn Asp His Glu Trp His Ser  
 2485 2490 2495

Ile Leu Val Glu Glu Met Asp Ala Ser Ile Arg Leu Met Val Asp Ser  
 2500 2505 2510

Met Gly Asn Thr Ser Leu Val Val Pro Glu Asn Cys Arg Gly Leu Arg  
 2515 2520 2525

Pro Glu Arg His Leu Leu Leu Gly Gly Leu Ile Leu Leu His Ser Ser  
 2530 2535 2540

Ser Asn Val Ser Gln Gly Phe Glu Gly Cys Leu Asp Ala Val Val Val  
 2545 2550 2555 2560

Asn Glu Glu Ala Leu Asp Leu Leu Ala Pro Gly Lys Thr Val Ala Gly  
 2565 2570 2575



Leu Leu Glu Thr Gln Ala Leu Thr Gln Cys Cys Leu His Ser Asp Tyr  
 2580 2585 2590

Cys Ser Gln Asn Thr Cys Leu Asn Gly Gly Lys Cys Ser Trp Thr His  
 2595 2600 2605

Gly Ala Gly Tyr Val Cys Lys Cys Pro Pro Gln Phe Ser Gly Lys His  
 2610 2615 2620

Cys Glu Gln Gly Arg Glu Asn Cys Thr Phe Ala Pro Cys Leu Glu Gly  
 2625 2630 2635 2640

Gly Thr Cys Ile Leu Ser Pro Lys Gly Ala Ser Cys Asn Cys Pro His  
 2645 2650 2655

Pro Tyr Thr Gly Asp Arg Cys Glu Met Glu Ala Arg Gly Cys Ser Glu  
 2660 2665 2670

Gly His Cys Leu Val Thr Pro Glu Ile Gln Arg Gly Asp Trp Gly Gln  
 2675 2680 2685

Gln Glu Leu Leu Ile Ile Thr Val Ala Val Ala Phe Ile Ile Ile Ser  
 2690 2695 2700

Thr Val Gly Leu Leu Phe Tyr Cys Arg Arg Cys Lys Ser His Lys Pro  
 2705 2710 2715 2720

Val Ala Met Glu Asp Pro Asp Leu Leu Ala Arg Ser Val Gly Val Asp  
 2725 2730 2735

Thr Gln Ala Met Pro Ala Ile Glu Leu Asn Pro Leu Ser Ala Ser Ser  
 2740 2745 2750

Cys Asn Asn Leu Asn Gln Pro Glu Pro Ser Lys Ala Ser Val Pro Asn  
 2755 2760 2765

Glu Leu Val Thr Phe Gly Pro Asn Ser Lys Gln Arg Pro Val Val Cys  
 2770 2775 2780

Ser Val Pro Pro Arg Leu Pro Pro Ala Ala Val Pro Ser His Ser Asp  
 2785 2790 2795 2800

Asn Glu Pro Val Ile Lys Arg Thr Trp Ser Ser Glu Glu Met Val Tyr  
 2805 2810 2815

Pro Gly Gly Ala Met Val Trp Pro Pro Thr Tyr Ser Arg Asn Glu Arg  
 2820 2825 2830

Trp Glu Tyr Pro His Ser Glu Val Thr Gln Gly Pro Leu Pro Pro Ser  
 2835 2840 2845

Ala His Arg His Ser Thr Pro Val Val Met Pro Glu Pro Asn Gly Leu  
 2850 2855 2860

Tyr Gly Gly Phe Pro Phe Pro Leu Glu Met Glu Asn Lys Arg Ala Pro  
 2865 2870 2875 2880

Leu Pro Pro Arg Tyr Ser Asn Gln Asn Leu Glu Asp Leu Met Pro Ser  
 2885 2890 2895

Arg Pro Pro Ser Pro Arg Glu Arg Leu Val Ala Pro Cys Leu Asn Glu  
 2900 2905 2910

Tyr Thr Ala Ile Ser Tyr Tyr His Ser Gln Phe Arg Gln Gly Gly Gly  
 2915 2920 2925

Gly Pro Cys Leu Ala Asp Gly Gly Tyr Lys Gly Val Gly Met Arg Leu  
 2930 2935 2940

Ser Arg Ala Gly Pro Ser Tyr Ala Val Cys Glu Val Glu Gly Ala Pro  
 2945 2950 2955 2960

Leu Ala Gly Gln Gly Gln Pro Arg Val Pro Pro Asn Tyr Glu Gly Ser  
 2965 2970 2975

Asp Met Val Glu Ser Asp Tyr Gly Ser Cys Glu Glu Val Met Phe  
 2980 2985 2990

<210> 23

<211> 928

<212> PRT

<213> Homo sapiens

<400> 23

His Cys Gln Glu Asp Gly Ile Met Leu Ser Ala Asp Cys Ser Glu Leu  
 1 5 10 15

Gly Leu Ser Ala Val Pro Gly Asp Leu Asp Pro Leu Thr Ala Tyr Leu  
 20 25 30

Asp Leu Ser Met Asn Asn Leu Thr Glu Leu Gln Pro Gly Leu Phe His  
 35 40 45

His Leu Arg Phe Leu Glu Glu Leu Arg Leu Ser Gly Asn His Leu Ser  
 50 55 60

His Ile Pro Gly Gln Ala Phe Ser Gly Leu Tyr Ser Leu Lys Ile Leu  
 65 70 75 80

Met Leu Gln Asn Asn Gln Leu Gly Gly Ile Pro Ala Glu Ala Leu Trp  
 85 90 95

Glu Leu Pro Ser Leu Gln Ser Leu Arg Leu Asp Ala Asn Leu Ile Ser  
 100 105 110

Leu Val Pro Glu Arg Ser Phe Glu Gly Leu Ser Ser Leu Arg His Leu  
 115 120 125

Trp Leu Asp Asp Asn Ala Leu Thr Glu Ile Pro Val Arg Ala Leu Asn  
 130 135 140

Asn Leu Pro Ala Leu Gln Ala Met Thr Leu Ala Leu Asn Arg Ile Ser  
 145 150 155 160

His Ile Pro Asp Tyr Ala Phe Gln Asn Leu Thr Ser Leu Val Val Leu  
 165 170 175

His Leu His Asn Asn Arg Ile Gln His Leu Gly Thr His Ser Phe Glu  
 180 185 190

Gly Leu His Asn Leu Glu Thr Leu Asp Leu Asn Tyr Asn Lys Leu Gln  
 195 200 205

Glu Phe Pro Val Ala Ile Arg Thr Leu Gly Arg Leu Gln Glu Leu Gly  
 210 215 220

Phe His Asn Asn Asn Ile Lys Ala Ile Pro Glu Lys Ala Phe Met Gly  
 225 230 235 240

Asn Pro Leu Leu Gln Thr Ile His Phe Tyr Asp Asn Pro Ile Gln Phe  
 245 250 255

Val Gly Arg Ser Ala Phe Gln Tyr Leu Pro Lys Leu His Thr Leu Ser  
 260 265 270

Leu Asn Gly Ala Met Asp Ile Gln Glu Phe Pro Asp Leu Lys Gly Thr  
 275 280 285

Thr Ser Leu Glu Ile Leu Thr Leu Thr Arg Ala Gly Ile Arg Leu Leu  
 290 295 300

Pro Ser Gly Met Cys Gln Gln Leu Pro Arg Leu Arg Val Leu Glu Leu  
 305 310 315 320

Ser His Asn Gln Ile Glu Glu Leu Pro Ser Leu His Arg Cys Gln Lys  
 325 330 335

Leu Glu Glu Ile Gly Leu Gln His Asn Arg Ile Trp Glu Ile Gly Ala  
 340 345 350

Asp Thr Phe Ser Gln Leu Ser Ser Leu Gln Ala Leu Asp Leu Ser Trp  
 355 360 365

Asn Ala Ile Arg Ser Ile His Pro Glu Ala Phe Ser Thr Leu His Ser  
 370 375 380

Leu Val Lys Leu Asp Leu Thr Asp Asn Gln Leu Thr Thr Leu Pro Leu  
 385 390 395 400

Ala Gly Leu Gly Gly Leu Met His Leu Lys Leu Lys Gly Asn Leu Ala  
 405 410 415

Leu Ser Gln Ala Phe Ser Lys Asp Ser Phe Pro Lys Leu Arg Ile Leu  
 420 425 430

Glu Val Pro Tyr Ala Tyr Gln Cys Cys Pro Tyr Gly Met Cys Ala Ser  
 435 440 445

Phe Phe Lys Ala Ser Gly Gln Trp Glu Ala Glu Asp Leu His Leu Asp  
 450 455 460

Asp Glu Glu Ser Ser Lys Arg Pro Leu Gly Leu Leu Ala Arg Gln Ala  
 465 470 475 480

Glu Asn His Tyr Asp Gln Asp Leu Asp Glu Leu Gln Leu Glu Met Glu  
 485 490 495

Asp Ser Lys Pro His Pro Ser Val Gln Cys Ser Pro Thr Pro Gly Pro  
 500 505 510

Phe Lys Pro Cys Glu Tyr Leu Phe Glu Ser Trp Gly Ile Arg Leu Ala  
 515 520 525

Val Trp Ala Ile Val Leu Leu Ser Val Leu Cys Asn Gly Leu Val Leu  
 530 535 540

Leu Thr Val Phe Ala Gly Gly Pro Ala Pro Leu Pro Pro Val Lys Phe  
 545 550 555 560

Val Val Gly Ala Ile Ala Gly Ala Asn Thr Leu Thr Gly Ile Ser Cys  
 565 570 575

Gly Leu Leu Ala Ser Val Asp Ala Leu Thr Phe Gly Gln Phe Ser Glu  
 580 585 590

Tyr Gly Ala Arg Trp Glu Thr Gly Leu Gly Cys Arg Ala Thr Gly Phe  
 595 600 605

Leu Ala Val Leu Gly Ser Glu Ala Ser Val Leu Leu Leu Thr Leu Ala  
 610 615 620

Ala Val Gln Cys Ser Val Ser Val Ser Cys Val Arg Ala Tyr Gly Lys  
 625 630 635 640

Ser Pro Ser Leu Gly Ser Val Arg Ala Gly Val Leu Gly Cys Leu Ala  
 645 650 655

Leu Ala Gly Leu Ala Ala Ala Leu Pro Leu Ala Ser Val Gly Glu Tyr  
 660 665 670

Gly Ala Ser Pro Leu Cys Leu Pro Tyr Ala Pro Pro Glu Gly Gln Pro  
 675 680 685

Ala Ala Leu Gly Phe Thr Val Ala Leu Val Met Met Asn Ser Phe Cys  
 690 695 700

Phe Leu Val Val Ala Gly Ala Tyr Ile Lys Leu Tyr Cys Asp Leu Pro  
 705 710 715 720

Arg Gly Asp Phe Glu Ala Val Trp Asp Cys Ala Met Val Arg His Val  
 725 730 735

Ala Trp Leu Ile Phe Ala Asp Gly Leu Leu Tyr Cys Pro Val Ala Phe  
 740 745 750

Leu Ser Phe Ala Ser Met Leu Gly Leu Phe Pro Val Thr Pro Glu Ala  
 755 760 765

Val Lys Ser Val Leu Leu Val Val Leu Pro Leu Pro Ala Cys Leu Asn  
 770 775 780  
 Pro Leu Leu Tyr Leu Leu Phe Asn Pro His Phe Arg Asp Asp Leu Arg  
 785 790 795 800  
 Arg Leu Arg Pro Arg Ala Gly Asp Ser Gly Pro Leu Ala Tyr Ala Ala  
 805 810 815  
 Ala Gly Glu Leu Glu Lys Ser Ser Cys Asp Ser Thr Gln Ala Leu Val  
 820 825 830  
 Ala Phe Ser Asp Val Asp Leu Ile Leu Glu Ala Ser Glu Ala Gly Arg  
 835 840 845  
 Pro Pro Gly Leu Glu Thr Tyr Gly Phe Pro Ser Val Thr Leu Ile Ser  
 850 855 860  
 Cys Gln Gln Pro Gly Ala Pro Arg Leu Glu Gly Ser His Cys Val Glu  
 865 870 875 880  
 Pro Glu Gly Asn His Phe Gly Asn Pro Gln Pro Ser Met Asp Gly Glu  
 885 890 895  
 Leu Leu Leu Arg Ala Glu Gly Ser Thr Pro Ala Gly Gly Gly Leu Ser  
 900 905 910  
 Gly Gly Gly Gly Phe Gln Pro Ser Gly Leu Ala Phe Ala Ser His Val  
 915 920 925

<210> 24  
 <211> 893  
 <212> PRT  
 <213> Homo sapiens

<400> 24  
 Met Asn Asn Leu Thr Glu Leu Gln Pro Gly Leu Phe His His Leu Arg  
 1 5 10 15  
 Phe Leu Glu Glu Leu Arg Leu Ser Gly Asn His Leu Ser His Ile Pro  
 20 25 30  
 Gly Gln Ala Phe Ser Gly Leu Tyr Ser Leu Lys Ile Leu Met Leu Gln  
 35 40 45  
 Asn Asn Gln Leu Gly Gly Ile Pro Ala Glu Ala Leu Trp Glu Leu Pro  
 50 55 60  
 Ser Leu Gln Ser Leu Arg Leu Asp Ala Asn Leu Ile Ser Leu Val Pro  
 65 70 75 80  
 Glu Arg Ser Phe Glu Gly Leu Ser Ser Leu Arg His Leu Trp Leu Asp

85					90					95						
Asp	Asn	Ala	Leu	Thr	Glu	Ile	Pro	Val	Arg	Ala	Leu	Asn	Asn	Leu	Pro	
100					105					110						
Ala	Leu	Gln	Ala	Met	Thr	Leu	Ala	Leu	Asn	Arg	Ile	Ser	His	Ile	Pro	
115					120					125						
Asp	Tyr	Ala	Phe	Gln	Asn	Leu	Thr	Ser	Leu	Val	Val	Leu	His	Leu	His	
130					135					140						
Asn	Asn	Arg	Ile	Gln	His	Leu	Gly	Thr	His	Ser	Phe	Glu	Gly	Leu	His	
145					150					155					160	
Asn	Leu	Glu	Thr	Leu	Asp	Leu	Asn	Tyr	Asn	Lys	Leu	Gln	Glu	Phe	Pro	
165					170					175						
Val	Ala	Ile	Arg	Thr	Leu	Gly	Arg	Leu	Gln	Glu	Leu	Gly	Phe	His	Asn	
180					185					190						
Asn	Asn	Ile	Lys	Ala	Ile	Pro	Glu	Lys	Ala	Phe	Met	Gly	Asn	Pro	Leu	
195					200					205						
Leu	Gln	Thr	Ile	His	Phe	Tyr	Asp	Asn	Pro	Ile	Gln	Phe	Val	Gly	Arg	
210					215					220						
Ser	Ala	Phe	Gln	Tyr	Leu	Pro	Lys	Leu	His	Thr	Leu	Ser	Leu	Asn	Gly	
225					230					235					240	
Ala	Met	Asp	Ile	Gln	Glu	Phe	Pro	Asp	Leu	Lys	Gly	Thr	Thr	Ser	Leu	
245					250					255						
Glu	Ile	Leu	Thr	Leu	Thr	Arg	Ala	Gly	Ile	Arg	Leu	Leu	Pro	Ser	Gly	
260					265					270						
Met	Cys	Gln	Gln	Leu	Pro	Arg	Leu	Arg	Val	Leu	Glu	Leu	Ser	His	Asn	
275					280					285						
Gln	Ile	Glu	Glu	Leu	Pro	Ser	Leu	His	Arg	Cys	Gln	Lys	Leu	Glu	Glu	
290					295					300						
Ile	Gly	Leu	Gln	His	Asn	Arg	Ile	Trp	Glu	Ile	Gly	Ala	Asp	Thr	Phe	
305					310					315					320	
Ser	Gln	Leu	Ser	Ser	Leu	Gln	Ala	Leu	Asp	Leu	Ser	Trp	Asn	Ala	Ile	
325					330					335						
Arg	Ser	Ile	His	Pro	Glu	Ala	Phe	Ser	Thr	Leu	His	Ser	Leu	Val	Lys	
340					345					350						
Leu	Asp	Leu	Thr	Asp	Asn	Gln	Leu	Thr	Thr	Leu	Pro	Leu	Ala	Gly	Leu	
355					360					365						
Gly	Gly	Leu	Met	His	Leu	Lys	Leu	Lys	Gly	Asn	Leu	Ala	Leu	Ser	Gln	
370					375					380						
Ala	Phe	Ser	Lys	Asp	Ser	Phe	Pro	Lys	Leu	Arg	Ile	Leu	Glu	Val	Pro	

385		390		395		400
Tyr Ala Tyr Gln Cys Cys Pro Tyr Gly Met Cys Ala Ser Phe Phe Lys	405		410		415	
Ala Ser Gly Gln Trp Glu Ala Glu Asp Leu His Leu Asp Asp Glu Glu	420		425		430	
Ser Ser Lys Arg Pro Leu Gly Leu Leu Ala Arg Gln Ala Glu Asn His	435		440		445	
Tyr Asp Gln Asp Leu Asp Glu Leu Gln Leu Glu Met Glu Asp Ser Lys	450		455		460	
Pro His Pro Ser Val Gln Cys Ser Pro Thr Pro Gly Pro Phe Lys Pro	465		470		475	480
Cys Glu Tyr Leu Phe Glu Ser Trp Gly Ile Arg Leu Ala Val Trp Ala	485		490		495	
Ile Val Leu Leu Ser Val Leu Cys Asn Gly Leu Val Leu Leu Thr Val	500		505		510	
Phe Ala Gly Gly Pro Val Pro Leu Pro Pro Val Lys Phe Val Val Gly	515		520		525	
Ala Ile Ala Gly Ala Asn Thr Leu Thr Gly Ile Ser Cys Gly Leu Leu	530		535		540	
Ala Ser Val Asp Ala Leu Thr Phe Gly Gln Phe Ser Glu Tyr Gly Ala	545		550		555	560
Arg Trp Glu Thr Gly Leu Gly Cys Arg Ala Thr Gly Phe Leu Ala Val	565		570		575	
Leu Gly Ser Glu Ala Ser Val Leu Leu Leu Thr Leu Ala Ala Val Gln	580		585		590	
Cys Ser Val Ser Val Ser Cys Val Arg Ala Tyr Gly Lys Ser Pro Ser	595		600		605	
Leu Gly Ser Val Arg Ala Gly Val Leu Gly Cys Leu Ala Leu Ala Gly	610		615		620	
Leu Ala Ala Ala Leu Pro Leu Ala Ser Val Gly Glu Tyr Gly Ala Ser	625		630		635	640
Pro Leu Cys Leu Pro Tyr Ala Pro Pro Glu Gly Gln Pro Ala Ala Leu	645		650		655	
Gly Phe Thr Val Ala Leu Val Met Met Asn Ser Phe Cys Phe Leu Val	660		665		670	
Val Ala Gly Ala Tyr Ile Lys Leu Tyr Cys Asp Leu Pro Arg Gly Asp	675		680		685	
Phe Glu Ala Val Trp Asp Cys Ala Met Val Arg His Val Ala Trp Leu						

690	695	700
Ile Phe Ala Asp Gly Leu Leu Tyr Cys Pro Val Ala Phe Leu Ser Phe 705 710 715 720		
Ala Ser Met Leu Gly Leu Phe Pro Val Thr Pro Glu Ala Val Lys Ser 725 730 735		
Val Leu Leu Val Val Leu Pro Leu Pro Ala Cys Leu Asn Pro Leu Leu 740 745 750		
Tyr Leu Leu Phe Asn Pro His Phe Arg Asp Asp Leu Arg Arg Leu Arg 755 760 765		
Pro Arg Ala Gly Asp Ser Gly Pro Leu Ala Tyr Ala Ala Ala Gly Glu 770 775 780		
Leu Glu Lys Ser Ser Cys Asp Ser Thr Gln Ala Leu Val Ala Phe Ser 785 790 795 800		
Asp Val Asp Leu Ile Leu Glu Ala Ser Glu Ala Gly Arg Pro Pro Gly 805 810 815		
Leu Glu Thr Tyr Gly Phe Pro Ser Val Thr Leu Ile Ser Cys Gln Gln 820 825 830		
Pro Gly Ala Pro Arg Leu Glu Gly Ser His Cys Val Glu Pro Glu Gly 835 840 845		
Asn His Phe Gly Asn Pro Gln Pro Ser Met Asp Gly Glu Leu Leu Leu 850 855 860		
Arg Ala Glu Gly Ser Thr Pro Ala Gly Gly Gly Leu Ser Gly Gly Gly 865 870 875 880		
Gly Phe Gln Pro Ser Gly Leu Ala Phe Ala Ser His Val 885 890		

<210> 25  
 <211> 828  
 <212> PRT  
 <213> Homo sapiens

<400> 25  
 Met Arg Leu Glu Gly Glu Gly Arg Ser Ala Arg Ala Gly Gln Asn Leu  
 1 5 10 15  
 Ser Arg Ala Gly Ser Ala Arg Arg Gly Ala Pro Arg Asp Leu Ser Met  
 20 25 30  
 Asn Asn Leu Thr Glu Leu Gln Pro Gly Leu Phe His His Leu Arg Phe  
 35 40 45  
 Leu Glu Glu Leu Arg Leu Ser Gly Asn His Leu Ser His Ile Pro Gly  
 50 55 60



Gln Ala Phe Ser Gly Leu Tyr Ser Leu Lys Ile Leu Met Leu Gln Asn  
 65 70 75 80  
 Asn Gln Leu Gly Gly Ile Pro Ala Glu Ala Leu Trp Glu Leu Pro Ser  
 85 90 95  
 Leu Gln Ser Leu Asp Leu Asn Tyr Asn Lys Leu Gln Glu Phe Pro Val  
 100 105 110  
 Ala Ile Arg Thr Leu Gly Arg Leu Gln Glu Leu Gly Phe His Asn Asn  
 115 120 125  
 Asn Ile Lys Ala Ile Pro Glu Lys Ala Phe Met Gly Asn Pro Leu Leu  
 130 135 140  
 Gln Thr Ile His Phe Tyr Asp Asn Pro Ile Gln Phe Val Gly Arg Ser  
 145 150 155 160  
 Ala Phe Gln Tyr Leu Pro Lys Leu His Thr Leu Ser Leu Asn Gly Ala  
 165 170 175  
 Met Asp Ile Gln Glu Phe Pro Asp Leu Lys Gly Thr Thr Ser Leu Glu  
 180 185 190  
 Ile Leu Thr Leu Thr Arg Ala Gly Ile Arg Leu Leu Pro Ser Gly Met  
 195 200 205  
 Cys Gln Gln Leu Pro Arg Leu Arg Val Leu Glu Leu Ser His Asn Gln  
 210 215 220  
 Ile Glu Glu Leu Pro Ser Leu His Arg Cys Gln Lys Leu Glu Glu Ile  
 225 230 235 240  
 Gly Leu Gln His Asn Arg Ile Trp Glu Ile Gly Ala Asp Thr Phe Ser  
 245 250 255  
 Gln Leu Ser Ser Leu Gln Ala Leu Asp Leu Ser Trp Asn Ala Ile Arg  
 260 265 270  
 Ser Ile His Pro Glu Ala Phe Ser Thr Leu His Ser Leu Val Lys Leu  
 275 280 285  
 Asp Leu Thr Asp Asn Gln Leu Thr Thr Leu Pro Leu Ala Gly Leu Gly  
 290 295 300  
 Gly Leu Met His Leu Lys Leu Lys Gly Asn Leu Ala Leu Ser Gln Ala  
 305 310 315 320  
 Phe Ser Lys Asp Ser Phe Pro Lys Leu Arg Ile Leu Glu Val Pro Tyr  
 325 330 335  
 Ala Tyr Gln Cys Cys Pro Tyr Gly Met Cys Ala Ser Phe Phe Lys Ala  
 340 345 350  
 Ser Gly Gln Trp Glu Ala Glu Asp Leu His Leu Asp Asp Glu Glu Ser  
 355 360 365

Ser Lys Arg Pro Leu Gly Leu Leu Ala Arg Gln Ala Glu Asn His Tyr  
 370 375 380  
 Asp Gln Asp Leu Asp Glu Leu Gln Leu Glu Met Glu Asp Ser Lys Pro  
 385 390 395 400  
 His Pro Ser Val Gln Cys Ser Pro Thr Pro Gly Pro Phe Lys Pro Cys  
 405 410 415  
 Glu Tyr Leu Phe Glu Ser Trp Gly Ile Arg Leu Ala Val Trp Ala Ile  
 420 425 430  
 Val Leu Leu Ser Val Leu Cys Asn Gly Leu Val Leu Leu Thr Val Phe  
 435 440 445  
 Ala Gly Gly Pro Val Pro Leu Pro Pro Val Lys Phe Val Val Gly Ala  
 450 455 460  
 Ile Ala Gly Ala Asn Thr Leu Thr Gly Ile Ser Cys Gly Leu Leu Ala  
 465 470 475 480  
 Ser Val Asp Ala Leu Thr Phe Gly Gln Phe Ser Glu Tyr Gly Ala Arg  
 485 490 495  
 Trp Glu Thr Gly Leu Gly Cys Arg Ala Thr Gly Phe Leu Ala Val Leu  
 500 505 510  
 Gly Ser Glu Ala Ser Val Leu Leu Leu Thr Leu Ala Ala Val Gln Cys  
 515 520 525  
 Ser Val Ser Val Ser Cys Val Arg Ala Tyr Gly Lys Ser Pro Ser Leu  
 530 535 540  
 Gly Ser Val Arg Ala Gly Val Leu Gly Cys Leu Ala Leu Ala Gly Leu  
 545 550 555 560  
 Ala Ala Ala Leu Pro Leu Ala Ser Val Gly Glu Tyr Gly Ala Ser Pro  
 565 570 575  
 Leu Cys Leu Pro Tyr Ala Pro Pro Glu Gly Gln Pro Ala Ala Leu Gly  
 580 585 590  
 Phe Thr Val Ala Leu Val Met Met Asn Ser Phe Cys Phe Leu Val Val  
 595 600 605  
 Ala Gly Ala Tyr Ile Lys Leu Tyr Cys Asp Leu Pro Arg Gly Asp Phe  
 610 615 620  
 Glu Ala Val Trp Asp Cys Ala Met Val Arg His Val Ala Trp Leu Ile  
 625 630 635 640  
 Phe Ala Asp Gly Leu Leu Tyr Cys Pro Val Ala Phe Leu Ser Phe Ala  
 645 650 655  
 Ser Met Leu Gly Leu Phe Pro Val Thr Pro Glu Ala Val Lys Ser Val  
 660 665 670

Leu Leu Val Val Leu Pro Leu Pro Ala Cys Leu Asn Pro Leu Leu Tyr  
675 680 685

Leu Leu Phe Asn Pro His Phe Arg Asp Asp Leu Arg Arg Leu Arg Pro  
690 695 700

Arg Ala Gly Asp Ser Gly Pro Leu Ala Tyr Ala Ala Ala Gly Glu Leu  
705 710 715 720

Glu Lys Ser Ser Cys Asp Ser Thr Gln Ala Leu Val Ala Phe Ser Asp  
725 730 735

Val Asp Leu Ile Leu Glu Ala Ser Glu Ala Gly Arg Pro Pro Gly Leu  
740 745 750

Glu Thr Tyr Gly Phe Pro Ser Val Thr Leu Ile Ser Cys Gln Gln Pro  
755 760 765

Gly Ala Pro Arg Leu Glu Gly Ser His Cys Val Glu Pro Glu Gly Asn  
770 775 780

His Phe Gly Asn Pro Gln Pro Ser Met Asp Gly Glu Leu Leu Leu Arg  
785 790 795 800

Ala Glu Gly Ser Thr Pro Ala Gly Gly Gly Leu Ser Gly Gly Gly Gly  
805 810 815

Phe Gln Pro Ser Gly Leu Ala Leu Leu His Thr Tyr  
820 825

<210> 26

<211> 907

<212> PRT

<213> Homo sapiens

<400> 26

Met Asp Thr Ser Arg Leu Gly Val Leu Leu Ser Leu Pro Val Leu Leu  
1 5 10 15

Gln Leu Ala Thr Gly Gly Ser Ser Pro Arg Ser Gly Val Leu Leu Arg  
20 25 30

Gly Cys Pro Thr His Cys His Cys Glu Pro Asp Gly Arg Met Leu Leu  
35 40 45

Arg Val Asp Cys Ser Asp Leu Gly Leu Ser Glu Leu Pro Ser Asn Leu  
50 55 60

Ser Val Phe Thr Ser Tyr Leu Asp Leu Ser Met Asn Asn Ile Ser Gln  
65 70 75 80

Leu Leu Pro Asn Pro Leu Pro Ser Leu Arg Phe Leu Glu Glu Leu Arg  
85 90 95

Leu Ala Gly Asn Ala Leu Thr Tyr Ile Pro Lys Gly Ala Phe Thr Gly  
100 105 110

Leu Tyr Ser Leu Lys Val Leu Met Leu Gln Asn Asn Gln Leu Arg His  
 115 120 125  
 Val Pro Thr Glu Ala Leu Gln Asn Leu Arg Ser Leu Gln Ser Leu Arg  
 130 135 140  
 Leu Asp Ala Asn His Ile Ser Tyr Val Pro Pro Ser Cys Phe Ser Gly  
 145 150 155 160  
 Leu His Ser Leu Arg His Leu Trp Leu Asp Asp Asn Ala Leu Thr Glu  
 165 170 175  
 Ile Pro Val Gln Ala Phe Arg Ser Leu Ser Ala Leu Gln Ala Met Thr  
 180 185 190  
 Leu Ala Leu Asn Lys Ile His His Ile Pro Asp Tyr Ala Phe Gly Asn  
 195 200 205  
 Leu Ser Ser Leu Val Val Leu His Leu His Asn Asn Arg Ile His Ser  
 210 215 220  
 Leu Gly Lys Lys Cys Phe Asp Gly Leu His Ser Leu Glu Thr Leu Asp  
 225 230 235 240  
 Leu Asn Tyr Asn Asn Leu Asp Glu Phe Pro Thr Ala Ile Arg Thr Leu  
 245 250 255  
 Ser Asn Leu Lys Glu Leu Gly Phe His Ser Asn Asn Ile Arg Ser Ile  
 260 265 270  
 Pro Glu Lys Ala Phe Val Gly Asn Pro Ser Leu Ile Thr Ile His Phe  
 275 280 285  
 Tyr Asp Asn Pro Ile Gln Phe Val Gly Arg Ser Ala Phe Gln His Leu  
 290 295 300  
 Pro Glu Leu Arg Thr Leu Thr Leu Asn Gly Ala Ser Gln Ile Thr Glu  
 305 310 315 320  
 Phe Pro Asp Leu Thr Gly Thr Ala Asn Leu Glu Ser Leu Thr Leu Thr  
 325 330 335  
 Gly Ala Gln Ile Ser Ser Leu Pro Gln Thr Val Cys Asn Gln Leu Pro  
 340 345 350  
 Asn Leu Gln Val Leu Asp Leu Ser Tyr Asn Leu Leu Glu Asp Leu Pro  
 355 360 365  
 Ser Phe Ser Val Cys Gln Lys Leu Gln Lys Ile Asp Leu Arg His Asn  
 370 375 380  
 Glu Ile Tyr Glu Ile Lys Val Asp Thr Phe Gln Gln Leu Leu Ser Leu  
 385 390 395 400  
 Arg Ser Leu Asn Leu Ala Trp Asn Lys Ile Ala Ile Ile His Pro Asn  
 405 410 415

Ala Phe Ser Thr Leu Pro Ser Leu Ile Lys Leu Asp Leu Ser Ser Asn  
 420 425 430  
 Leu Leu Ser Ser Phe Pro Ile Thr Gly Leu His Gly Leu Thr His Leu  
 435 440 445  
 Lys Leu Thr Gly Asn His Ala Leu Gln Ser Leu Ile Ser Ser Glu Asn  
 450 455 460  
 Phe Pro Glu Leu Lys Val Ile Glu Met Pro Tyr Ala Tyr Gln Cys Cys  
 465 470 475 480  
 Ala Phe Gly Val Cys Glu Asn Ala Tyr Lys Ile Ser Asn Gln Trp Asn  
 485 490 495  
 Lys Gly Asp Asn Ser Ser Met Asp Asp Leu His Lys Lys Asp Ala Gly  
 500 505 510  
 Met Phe Gln Ala Gln Asp Glu Arg Asp Leu Glu Asp Phe Leu Leu Asp  
 515 520 525  
 Phe Glu Glu Asp Leu Lys Ala Leu His Ser Val Gln Cys Ser Pro Ser  
 530 535 540  
 Pro Gly Pro Phe Lys Pro Cys Glu His Leu Leu Asp Gly Trp Leu Ile  
 545 550 555 560  
 Arg Ile Gly Val Trp Thr Ile Ala Val Leu Ala Leu Thr Cys Asn Ala  
 565 570 575  
 Leu Val Thr Ser Thr Val Phe Arg Ser Pro Leu Tyr Ile Ser Pro Ile  
 580 585 590  
 Lys Leu Leu Ile Gly Val Ile Ala Ala Val Asn Met Leu Thr Gly Val  
 595 600 605  
 Ser Ser Ala Val Leu Ala Gly Val Asp Ala Phe Thr Phe Gly Ser Phe  
 610 615 620  
 Ala Arg His Gly Ala Trp Trp Glu Asn Gly Val Gly Cys His Val Ile  
 625 630 635 640  
 Gly Phe Leu Ser Ile Phe Ala Ser Glu Ser Ser Val Phe Leu Leu Thr  
 645 650 655  
 Leu Ala Ala Leu Glu Arg Gly Phe Ser Val Lys Tyr Ser Ala Lys Phe  
 660 665 670  
 Glu Thr Lys Ala Pro Phe Ser Ser Leu Lys Val Ile Ile Leu Leu Cys  
 675 680 685  
 Ala Leu Leu Ala Leu Thr Met Ala Ala Val Pro Leu Leu Gly Gly Ser  
 690 695 700  
 Lys Tyr Gly Ala Ser Pro Leu Cys Leu Pro Leu Pro Phe Gly Glu Pro  
 705 710 715 720

Ser Thr Met Gly Tyr Met Val Ala Leu Ile Leu Leu Asn Ser Leu Cys  
 725 730 735  
 Phe Leu Met Met Thr Ile Ala Tyr Thr Lys Leu Tyr Cys Asn Leu Asp  
 740 745 750  
 Lys Gly Asp Leu Glu Asn Ile Trp Asp Cys Ser Met Val Lys His Ile  
 755 760 765  
 Ala Leu Leu Leu Phe Thr Asn Cys Ile Leu Asn Cys Pro Val Ala Phe  
 770 775 780  
 Leu Ser Phe Ser Ser Leu Ile Asn Leu Thr Phe Ile Ser Pro Glu Val  
 785 790 795 800  
 Ile Lys Phe Ile Leu Leu Val Val Val Pro Leu Pro Ala Cys Leu Asn  
 805 810 815  
 Pro Leu Leu Tyr Ile Leu Phe Asn Pro His Phe Lys Glu Asp Leu Val  
 820 825 830  
 Ser Leu Arg Lys Gln Thr Tyr Val Trp Thr Arg Ser Lys His Pro Ser  
 835 840 845  
 Leu Met Ser Ile Asn Ser Asp Asp Val Glu Lys Gln Ser Cys Asp Ser  
 850 855 860  
 Thr Gln Ala Leu Val Thr Phe Thr Ser Ser Ser Ile Thr Tyr Asp Leu  
 865 870 875 880  
 Pro Pro Ser Ser Val Pro Ser Pro Ala Tyr Pro Val Thr Glu Ser Cys  
 885 890 895  
 His Leu Ser Ser Val Ala Phe Val Pro Cys Leu  
 900 905

<210> 27  
 <211> 907  
 <212> PRT  
 <213> Homo sapiens

<400> 27  
 Met Asp Thr Ser Arg Leu Gly Val Leu Leu Ser Leu Pro Val Leu Leu  
 1 5 10 15  
 Gln Leu Ala Thr Gly Gly Ser Ser Pro Arg Ser Gly Val Leu Leu Arg  
 20 25 30  
 Gly Cys Pro Thr His Cys His Cys Glu Pro Asp Gly Arg Met Leu Leu  
 35 40 45  
 Arg Val Asp Cys Ser Asp Leu Gly Leu Ser Glu Leu Pro Ser Asn Leu  
 50 55 60  
 Ser Val Phe Thr Ser Tyr Leu Asp Leu Ser Met Asn Asn Ile Ser Gln

65		70		75		80
Leu Leu Pro Asn Pro Leu Pro Ser Leu His Phe Leu Glu Glu Leu Arg						
	85			90		95
Leu Ala Gly Asn Ala Leu Thr Tyr Ile Pro Lys Gly Ala Phe Thr Gly						
	100			105		110
Leu Tyr Ser Leu Lys Val Leu Met Leu Gln Asn Asn Gln Leu Arg His						
	115			120		125
Val Pro Thr Glu Ala Leu Gln Asn Leu Arg Ser Leu Gln Ser Leu Arg						
	130			135		140
Leu Asp Ala Asn His Ile Ser Tyr Val Pro Pro Ser Cys Phe Ser Gly						
145		150		155		160
Leu His Ser Leu Arg His Leu Trp Leu Asp Asp Asn Ala Leu Thr Glu						
	165			170		175
Ile Pro Val Gln Ala Phe Arg Ser Leu Ser Ala Leu Gln Ala Met Thr						
	180			185		190
Leu Ala Leu Asn Lys Ile His His Ile Pro Asp Tyr Ala Phe Gly Asn						
	195			200		205
Leu Ser Ser Trp Val Val Leu His Leu His Asn Asn Arg Ile His Ser						
	210			215		220
Leu Gly Lys Lys Cys Phe Asp Gly Leu His Ser Leu Glu Thr Leu Asp						
225		230		235		240
Leu Asn Tyr Asn Asn Leu Asp Glu Phe Pro Thr Ala Ile Arg Thr Leu						
	245			250		255
Ser Asn Leu Lys Glu Leu Gly Phe His Ser Asn Asn Ile Arg Ser Ile						
	260			265		270
Pro Glu Lys Ala Phe Val Gly Asn Pro Ser Leu Ile Thr Ile His Phe						
	275			280		285
Tyr Asp Asn Pro Ile Gln Phe Val Gly Arg Ser Ala Phe Gln His Leu						
	290			295		300
Pro Glu Leu Arg Thr Leu Thr Leu Asn Gly Ala Ser Gln Ile Thr Glu						
305		310		315		320
Phe Pro Asp Leu Thr Gly Thr Ala Asn Leu Glu Ser Leu Thr Leu Thr						
	325			330		335
Gly Ala Gln Ile Ser Ser Leu Pro Gln Thr Val Cys Asn Gln Leu Pro						
	340			345		350
Asn Leu Gln Val Leu Asp Leu Ser Tyr Asn Leu Leu Glu Asp Leu Pro						
	355			360		365
Ser Phe Ser Val Cys Gln Lys Leu Gln Lys Ile Asp Leu Arg His Asn						

370	375	380
Glu Ile Tyr Glu Ile Lys Val Asp Thr Phe Gln Gln Leu Leu Ser Leu 385 390 395 400		
Arg Ser Leu Asn Leu Ala Trp Asn Lys Ile Ala Ile Ile His Pro Asn 405 410 415		
Ala Phe Ser Thr Leu Pro Ser Leu Ile Lys Leu Asp Leu Ser Ser Asn 420 425 430		
Leu Leu Ser Ser Phe Pro Ile Thr Gly Leu His Gly Leu Thr His Leu 435 440 445		
Lys Leu Thr Gly Asn His Ala Leu Gln Ser Leu Ile Ser Ser Glu Asn 450 455 460		
Phe Pro Glu Leu Lys Val Ile Glu Met Pro Tyr Ala Tyr Gln Cys Cys 465 470 475 480		
Ala Phe Gly Val Cys Glu Asn Ala Tyr Lys Ile Ser Asn Gln Trp Asn 485 490 495		
Lys Gly Asp Asn Ser Ser Met Asp Asp Leu His Lys Lys Asp Ala Gly 500 505 510		
Met Phe Gln Ala Gln Asp Glu Arg Asp Leu Glu Asp Phe Leu Leu Asp 515 520 525		
Phe Glu Glu Asp Leu Lys Ala Leu His Ser Val Gln Cys Ser Pro Ser 530 535 540		
Pro Gly Pro Phe Lys Pro Cys Glu His Leu Leu Asp Gly Trp Leu Ile 545 550 555 560		
Arg Ile Gly Val Trp Thr Ile Ala Val Leu Ala Leu Thr Cys Asn Ala 565 570 575		
Leu Val Thr Ser Thr Val Phe Arg Ser Pro Leu Tyr Ile Ser Pro Ile 580 585 590		
Lys Leu Leu Ile Gly Val Ile Ala Ala Val Asn Met Leu Thr Gly Val 595 600 605		
Ser Ser Ala Val Leu Ala Gly Val Asp Ala Phe Thr Phe Gly Ser Phe 610 615 620		
Ala Arg His Gly Ala Trp Trp Glu Asn Gly Val Gly Cys His Val Ile 625 630 635 640		
Gly Phe Leu Ser Ile Phe Ala Ser Glu Ser Ser Val Phe Leu Leu Thr 645 650 655		
Leu Ala Ala Leu Glu Arg Gly Phe Ser Val Lys Tyr Ser Ala Lys Phe 660 665 670		
Glu Thr Lys Ala Pro Phe Ser Ser Leu Lys Val Ile Ile Leu Leu Cys		



675					680					685					
Ala	Leu	Leu	Ala	Leu	Thr	Met	Ala	Ala	Val	Pro	Leu	Leu	Gly	Gly	Ser
690						695					700				
Lys	Tyr	Gly	Ala	Ser	Pro	Leu	Cys	Leu	Pro	Leu	Pro	Phe	Gly	Glu	Pro
705					710					715					720
Ser	Thr	Met	Gly	Tyr	Met	Val	Ala	Leu	Ile	Leu	Leu	Asn	Ser	Leu	Cys
			725						730					735	
Phe	Leu	Met	Met	Thr	Ile	Ala	Tyr	Thr	Lys	Leu	Tyr	Cys	Asn	Leu	Asp
			740					745					750		
Lys	Gly	Asp	Leu	Glu	Asn	Ile	Trp	Asp	Cys	Ser	Met	Val	Lys	His	Ile
		755					760					765			
Ala	Leu	Leu	Leu	Phe	Thr	Asn	Cys	Ile	Leu	Asn	Cys	Pro	Val	Ala	Phe
			770			775					780				
Leu	Ser	Phe	Ser	Ser	Leu	Ile	Asn	Leu	Thr	Phe	Ile	Ser	Pro	Glu	Val
785					790					795					800
Ile	Lys	Phe	Ile	Leu	Leu	Val	Val	Val	Pro	Leu	Pro	Ala	Cys	Leu	Asn
			805						810					815	
Pro	Leu	Leu	Tyr	Ile	Leu	Phe	Asn	Pro	His	Phe	Lys	Glu	Asp	Leu	Val
			820					825					830		
Ser	Leu	Arg	Lys	Gln	Thr	Tyr	Val	Trp	Thr	Arg	Ser	Lys	His	Pro	Ser
		835					840					845			
Leu	Met	Ser	Ile	Asn	Ser	Asp	Asp	Val	Glu	Lys	Gln	Ser	Cys	Asp	Ser
	850					855					860				
Thr	Gln	Ala	Leu	Val	Thr	Phe	Thr	Ser	Ser	Ser	Ile	Thr	Tyr	Asp	Leu
865					870					875					880
Pro	Pro	Ser	Ser	Val	Pro	Ser	Pro	Ala	Tyr	Pro	Val	Thr	Glu	Ser	Cys
			885						890					895	
His	Leu	Ser	Ser	Val	Ala	Phe	Val	Pro	Cys	Leu					
		900						905							

<210> 28

<211> 1531

<212> PRT

<213> Mus musculus

<400> 28

Met	Ala	Leu	Thr	Pro	Gln	Arg	Gly	Ser	Ser	Ser	Gly	Leu	Ser	Arg	Pro
1				5				10					15		

Glu	Leu	Trp	Leu	Leu	Trp	Ala	Ala	Ala	Trp	Arg	Leu	Gly	Ala	Thr
	20					25						30		

Ala	Cys	Pro	Ala	Leu	Cys	Thr	Cys	Thr	Gly	Thr	Thr	Val	Asp	Cys	His	35	40	45	
Gly	Thr	Gly	Leu	Gln	Ala	Ile	Pro	Lys	Asn	Ile	Pro	Arg	Asn	Thr	Glu	50	55	60	
Arg	Leu	Glu	Leu	Asn	Gly	Asn	Asn	Ile	Thr	Arg	Ile	His	Lys	Asn	Asp	65	70	75	80
Phe	Ala	Gly	Leu	Lys	Gln	Leu	Arg	Val	Leu	Gln	Leu	Met	Glu	Asn	Gln	85	90	95	
Ile	Gly	Ala	Val	Glu	Arg	Gly	Ala	Phe	Asp	Asp	Met	Lys	Glu	Leu	Glu	100	105	110	
Arg	Leu	Arg	Leu	Asn	Arg	Asn	Gln	Leu	Gln	Val	Leu	Pro	Glu	Leu	Leu	115	120	125	
Phe	Gln	Asn	Asn	Gln	Ala	Leu	Ser	Arg	Leu	Asp	Leu	Ser	Glu	Asn	Phe	130	135	140	
Leu	Gln	Ala	Val	Pro	Arg	Lys	Ala	Phe	Arg	Gly	Ala	Thr	Asp	Leu	Lys	145	150	155	160
Asn	Leu	Gln	Leu	Asp	Lys	Asn	Arg	Ile	Ser	Cys	Ile	Glu	Glu	Gly	Ala	165	170	175	
Phe	Arg	Ala	Leu	Arg	Gly	Leu	Glu	Val	Leu	Thr	Leu	Asn	Asn	Asn	Asn	180	185	190	
Ile	Thr	Thr	Ile	Pro	Val	Ser	Ser	Phe	Asn	His	Met	Pro	Lys	Leu	Arg	195	200	205	
Thr	Phe	Arg	Leu	His	Ser	Asn	His	Leu	Phe	Cys	Asp	Cys	His	Leu	Ala	210	215	220	
Trp	Leu	Ser	Gln	Trp	Leu	Arg	Gln	Arg	Pro	Thr	Ile	Gly	Leu	Phe	Thr	225	230	235	240
Gln	Cys	Ser	Gly	Pro	Ala	Ser	Leu	Arg	Gly	Leu	Asn	Val	Ala	Glu	Val	245	250	255	
Gln	Lys	Gly	Glu	Phe	Ser	Cys	Ser	Gly	Gln	Gly	Glu	Ala	Ala	Gly	Ala	260	265	270	
Pro	Ala	Cys	Thr	Leu	Ser	Ser	Gly	Ser	Cys	Pro	Ala	Met	Cys	Ser	Cys	275	280	285	
Ser	Ser	Gly	Ile	Val	Asp	Cys	Arg	Gly	Lys	Gly	Leu	Thr	Ala	Ile	Pro	290	295	300	
Ala	Asn	Leu	Pro	Glu	Thr	Met	Thr	Glu	Ile	Arg	Leu	Glu	Leu	Asn	Gly	305	310	315	320
Ile	Lys	Ser	Ile	Pro	Pro	Gly	Ala	Phe	Ser	Pro	Tyr	Arg	Lys	Leu	Arg	325	330	335	

Arg	Ile	Asp	Leu	Ser	Asn	Asn	Gln	Ile	Ala	Glu	Ile	Ala	Pro	Asp	Ala	340	345	350
Phe	Gln	Gly	Leu	Arg	Ser	Leu	Asn	Ser	Leu	Val	Leu	Tyr	Gly	Asn	Lys	355	360	365
Ile	Thr	Asp	Leu	Pro	Arg	Gly	Val	Phe	Gly	Gly	Leu	Tyr	Thr	Leu	Gln	370	375	380
Leu	Leu	Leu	Leu	Asn	Ala	Asn	Lys	Ile	Asn	Cys	Ile	Arg	Pro	Asp	Ala	385	390	395 400
Phe	Gln	Asp	Leu	Gln	Asn	Leu	Ser	Leu	Leu	Ser	Leu	Tyr	Asp	Asn	Lys	405	410	415
Ile	Gln	Ser	Leu	Ala	Lys	Gly	Thr	Phe	Thr	Ser	Leu	Arg	Ala	Ile	Gln	420	425	430
Thr	Leu	His	Leu	Ala	Gln	Asn	Pro	Phe	Ile	Cys	Asp	Cys	Asn	Leu	Lys	435	440	445
Trp	Leu	Ala	Asp	Phe	Leu	Arg	Thr	Asn	Pro	Ile	Glu	Thr	Thr	Gly	Ala	450	455	460
Arg	Cys	Ala	Ser	Pro	Arg	Arg	Leu	Ala	Asn	Lys	Arg	Ile	Gly	Gln	Ile	465	470	475 480
Lys	Ser	Lys	Lys	Phe	Arg	Cys	Ser	Ala	Lys	Glu	Gln	Tyr	Phe	Ile	Pro	485	490	495
Gly	Thr	Glu	Asp	Tyr	His	Leu	Asn	Ser	Glu	Cys	Thr	Ser	Asp	Val	Ala	500	505	510
Cys	Pro	His	Lys	Cys	Arg	Cys	Glu	Ala	Ser	Val	Val	Glu	Cys	Ser	Ser	515	520	525
Leu	Lys	Leu	Ser	Lys	Ile	Pro	Glu	Arg	Ile	Pro	Gln	Ser	Thr	Thr	Glu	530	535	540
Leu	Arg	Leu	Asn	Asn	Asn	Glu	Ile	Ser	Ile	Leu	Glu	Ala	Thr	Gly	Leu	545	550	555 560
Phe	Lys	Lys	Leu	Ser	His	Leu	Lys	Lys	Ile	Asn	Leu	Ser	Asn	Asn	Lys	565	570	575
Val	Ser	Glu	Ile	Glu	Asp	Gly	Thr	Phe	Glu	Gly	Ala	Ala	Ser	Val	Ser	580	585	590
Glu	Leu	His	Leu	Thr	Ala	Asn	Gln	Leu	Glu	Ser	Ile	Arg	Ser	Gly	Met	595	600	605
Phe	Arg	Gly	Leu	Asp	Gly	Leu	Arg	Thr	Leu	Met	Leu	Arg	Asn	Asn	Arg	610	615	620
Ile	Ser	Cys	Ile	His	Asn	Asp	Ser	Phe	Thr	Gly	Leu	Arg	Asn	Val	Arg	625	630	635 640

Leu	Leu	Ser	Leu	Tyr	Asp	Asn	His	Ile	Thr	Thr	Ile	Ser	Pro	Gly	Ala	
				645					650					655		
Phe	Asp	Thr	Leu	Gln	Ala	Leu	Ser	Thr	Leu	Asn	Leu	Leu	Ala	Asn	Pro	
			660					665					670			
Phe	Asn	Cys	Asn	Cys	His	Leu	Ser	Trp	Leu	Gly	Asp	Trp	Leu	Arg	Lys	
		675					680				685					
Arg	Lys	Ile	Val	Thr	Gly	Asn	Pro	Arg	Cys	Gln	Asn	Pro	Asp	Phe	Leu	
	690					695					700					
Arg	Gln	Ile	Pro	Leu	Gln	Asp	Val	Ala	Phe	Pro	Asp	Phe	Arg	Cys	Glu	
705					710					715					720	
Glu	Gly	Gln	Glu	Glu	Val	Gly	Cys	Leu	Pro	Arg	Pro	Gln	Cys	Pro	Gln	
			725						730					735		
Glu	Cys	Ala	Cys	Leu	Asp	Thr	Val	Val	Arg	Cys	Ser	Asn	Lys	His	Leu	
			740					745					750			
Gln	Ala	Leu	Pro	Lys	Gly	Ile	Pro	Lys	Asn	Val	Thr	Glu	Leu	Tyr	Leu	
	755						760					765				
Asp	Gly	Asn	Gln	Phe	Thr	Leu	Val	Pro	Gly	Gln	Leu	Ser	Thr	Phe	Lys	
	770					775					780					
Tyr	Leu	Gln	Leu	Val	Asp	Leu	Ser	Asn	Asn	Lys	Ile	Ser	Ser	Leu	Ser	
785					790					795					800	
Asn	Ser	Ser	Phe	Thr	Asn	Met	Ser	Gln	Leu	Thr	Thr	Leu	Ile	Leu	Ser	
				805					810					815		
Tyr	Asn	Ala	Leu	Gln	Cys	Ile	Pro	Pro	Leu	Ala	Phe	Gln	Arg	Leu	Arg	
			820					825					830			
Ser	Leu	Arg	Leu	Leu	Ser	Leu	His	Gly	Asn	Asp	Val	Ser	Thr	Leu	Gln	
		835					840					845				
Glu	Gly	Ile	Phe	Ala	Asp	Val	Thr	Ser	Leu	Ser	His	Leu	Ala	Ile	Gly	
	850					855					860					
Ala	Asn	Pro	Leu	Tyr	Cys	Asp	Cys	Arg	Leu	Arg	Trp	Leu	Ser	Ser	Trp	
865					870					875					880	
Val	Lys	Thr	Gly	Tyr	Lys	Glu	Pro	Gly	Ile	Ala	Arg	Cys	Ala	Gly	Pro	
				885					890					895		
Pro	Glu	Met	Glu	Gly	Lys	Leu	Leu	Leu	Thr	Thr	Pro	Ala	Lys	Lys	Phe	
		900						905					910			
Glu	Cys	Gln	Gly	Pro	Pro	Ser	Leu	Ala	Val	Gln	Ala	Lys	Cys	Asp	Pro	
		915					920				925					
Cys	Leu	Ser	Ser	Pro	Cys	Gln	Asn	Gln	Gly	Thr	Cys	His	Asn	Asp	Pro	
	930					935					940					

Leu Glu Val Tyr Arg Cys Thr Cys Pro Ser Gly Tyr Lys Gly Arg His  
 945 950 955 960  
 Cys Glu Val Ser Leu Asp Gly Cys Ser Ser Asn Pro Cys Gly Asn Gly  
 965 970 975  
 Gly Thr Cys His Ala Gln Glu Gly Glu Asp Ala Gly Phe Thr Cys Ser  
 980 985 990  
 Cys Pro Ser Gly Phe Glu Gly Pro Thr Cys Gly Val Asp Thr Asp Asp  
 995 1000 1005  
 Cys Val Lys His Ala Cys Val Asn Gly Gly Val Cys Val Asp Gly Val  
 1010 1015 1020  
 Gly Asn Tyr Thr Cys Gln Cys Pro Leu Gln Tyr Thr Gly Arg Ala Cys  
 1025 1030 1035 1040  
 Glu Gln Leu Val Asp Phe Cys Ser Pro Asp Met Asn Pro Cys Gln His  
 1045 1050 1055  
 Glu Ala Gln Cys Val Gly Thr Pro Asp Gly Pro Arg Cys Glu Cys Met  
 1060 1065 1070  
 Leu Gly Tyr Thr Gly Asp Asn Cys Ser Glu Asn Gln Asp Asp Cys Lys  
 1075 1080 1085  
 Asp His Lys Cys Gln Asn Gly Ala Gln Cys Val Asp Glu Val Asn Ser  
 1090 1095 1100  
 Tyr Ala Cys Leu Cys Val Glu Gly Tyr Ser Gly Gln Leu Cys Glu Ile  
 1105 1110 1115 1120  
 Pro Pro Ala Pro Arg Ser Ser Cys Glu Gly Thr Glu Cys Gln Asn Gly  
 1125 1130 1135  
 Ala Asn Cys Val Asp Gln Gly Ser Arg Pro Val Cys Gln Cys Leu Pro  
 1140 1145 1150  
 Gly Phe Gly Gly Pro Glu Cys Glu Lys Leu Leu Ser Val Asn Phe Val  
 1155 1160 1165  
 Asp Arg Asp Thr Tyr Leu Gln Phe Thr Asp Leu Gln Asn Trp Pro Arg  
 1170 1175 1180  
 Ala Asn Ile Thr Leu Gln Val Ser Thr Ala Glu Asp Asn Gly Ile Leu  
 1185 1190 1195 1200  
 Leu Tyr Asn Gly Asp Asn Asp His Ile Ala Val Glu Leu Tyr Gln Gly  
 1205 1210 1215  
 His Val Arg Val Ser Tyr Asp Pro Gly Ser Tyr Pro Ser Ser Ala Ile  
 1220 1225 1230  
 Tyr Ser Ala Glu Thr Ile Asn Asp Gly Gln Phe His Thr Val Glu Leu  
 1235 1240 1245

Val Thr Phe Asp Gln Met Val Asn Leu Ser Ile Asp Gly Gly Ser Pro  
 1250 1255 1260  
 Met Thr Met Asp Asn Phe Gly Lys His Tyr Thr Leu Asn Ser Glu Ala  
 1265 1270 1275 1280  
 Pro Leu Tyr Val Gly Gly Met Pro Val Asp Val Asn Ser Ala Ala Phe  
 1285 1290 1295  
 Arg Leu Trp Gln Ile Leu Asn Gly Thr Ser Phe His Gly Cys Ile Arg  
 1300 1305 1310  
 Asn Leu Tyr Ile Asn Asn Glu Leu Gln Asp Phe Thr Lys Thr Gln Met  
 1315 1320 1325  
 Lys Pro Gly Val Val Pro Gly Cys Glu Pro Cys Arg Lys Leu Tyr Cys  
 1330 1335 1340  
 Leu His Gly Ile Cys Gln Pro Asn Ala Thr Pro Gly Pro Val Cys His  
 1345 1350 1355 1360  
 Cys Glu Ala Gly Trp Gly Gly Leu His Cys Asp Gln Pro Val Asp Gly  
 1365 1370 1375  
 Pro Cys His Gly His Lys Cys Val His Gly Lys Cys Val Pro Leu Asp  
 1380 1385 1390  
 Ala Leu Ala Tyr Ser Cys Gln Cys Gln Asp Gly Tyr Ser Gly Ala Leu  
 1395 1400 1405  
 Cys Asn Gln Val Gly Ala Val Ala Glu Pro Cys Gly Gly Leu Gln Cys  
 1410 1415 1420  
 Leu His Gly His Cys Gln Ala Ser Ala Thr Lys Gly Ala His Cys Val  
 1425 1430 1435 1440  
 Cys Ser Pro Gly Phe Ser Gly Glu Leu Cys Glu Gln Glu Ser Glu Cys  
 1445 1450 1455  
 Arg Gly Asp Pro Val Arg Asp Phe His Arg Val Gln Arg Gly Tyr Ala  
 1460 1465 1470  
 Ile Cys Gln Thr Thr Arg Pro Leu Ser Trp Val Glu Cys Arg Gly Ala  
 1475 1480 1485  
 Cys Pro Gly Gln Gly Cys Cys Gln Gly Leu Arg Leu Lys Arg Arg Lys  
 1490 1495 1500  
 Leu Thr Phe Glu Cys Ser Asp Gly Thr Ser Phe Ala Glu Glu Val Glu  
 1505 1510 1515 1520  
 Lys Pro Thr Lys Cys Gly Cys Ala Gln Cys Val  
 1525 1530

<210> 29

<211> 1523

<212> PRT

<213> *Drosophila melanogaster*

<400> 29

Met Ala Pro Gly Trp Ala Gly Val Gly Ala Ala Val Arg Ala Arg Leu  
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Ala Leu Ala Leu Ala Leu Ala Ser Val Leu Ser Gly Pro Pro Ala Val  
20 25 30

Ala Cys Pro Thr Lys Cys Thr Cys Ser Ala Ala Ser Val Asp Cys His  
35 40 45

Gly Leu Gly Leu Arg Ala Val Pro Arg Gly Ile Pro Arg Asn Ala Glu  
50 55 60

Arg Leu Asp Leu Asp Arg Asn Asn Ile Thr Arg Ile Thr Lys Met Asp  
65 70 75 80

Phe Ala Gly Leu Lys Asn Leu Arg Val Leu His Leu Glu Asp Asn Gln  
85 90 95

Val Ser Val Ile Glu Arg Gly Ala Phe Gln Asp Leu Lys Gln Leu Glu  
100 105 110

Arg Leu Arg Leu Asn Lys Asn Lys Leu Gln Val Leu Pro Glu Leu Leu  
115 120 125

Phe Gln Ser Thr Pro Lys Leu Thr Arg Leu Asp Leu Ser Glu Asn Gln  
130 135 140

Ile Gln Gly Ile Pro Arg Lys Ala Phe Arg Gly Ile Thr Asp Val Lys  
145 150 155 160

Asn Leu Gln Leu Asp Asn Asn His Ile Ser Cys Ile Glu Asp Gly Ala  
165 170 175

Phe Arg Ala Leu Arg Asp Leu Glu Ile Leu Thr Leu Asn Asn Asn Asn  
180 185 190

Ile Ser Arg Ile Leu Val Thr Ser Phe Asn His Met Pro Lys Ile Arg  
195 200 205

Thr Leu Arg Leu His Ser Asn His Leu Tyr Cys Asp Cys His Leu Ala  
210 215 220

Trp Leu Ser Asp Trp Leu Arg Gln Arg Arg Thr Val Gly Gln Phe Thr  
225 230 235 240

Leu Cys Met Ala Pro Val His Leu Arg Gly Phe Asn Val Ala Asp Val  
245 250 255

Gln Lys Lys Glu Tyr Val Cys Pro Ala Pro His Ser Glu Pro Pro Ser  
260 265 270

Cys Asn Ala Asn Ser Ile Ser Cys Pro Ser Pro Cys Thr Cys Ser Asn  
275 280 285

Asn Ile Val Asp Cys Arg Gly Lys Gly Leu Met Glu Ile Pro Ala Asn  
 290 295 300  
 Leu Pro Glu Gly Ile Val Glu Ile Arg Leu Glu Gln Asn Ser Ile Lys  
 305 310 315 320  
 Ala Ile Pro Ala Gly Ala Phe Thr Gln Tyr Lys Lys Leu Lys Arg Ile  
 325 330 335  
 Asp Ile Ser Lys Asn Gln Ile Ser Asp Ile Ala Pro Asp Ala Phe Gln  
 340 345 350  
 Gly Leu Lys Ser Leu Thr Ser Leu Val Leu Tyr Gly Asn Lys Ile Thr  
 355 360 365  
 Glu Ile Ala Lys Gly Leu Phe Asp Gly Leu Val Ser Leu Gln Leu Leu  
 370 375 380  
 Leu Leu Asn Ala Asn Lys Ile Asn Cys Leu Arg Val Asn Thr Phe Gln  
 385 390 395 400  
 Asp Leu Gln Asn Leu Asn Leu Leu Ser Leu Tyr Asp Asn Lys Leu Gln  
 405 410 415  
 Thr Ile Ser Lys Gly Leu Phe Ala Pro Leu Gln Ser Ile Gln Thr Leu  
 420 425 430  
 His Leu Ala Gln Asn Pro Phe Val Cys Asp Cys His Leu Lys Trp Leu  
 435 440 445  
 Ala Asp Tyr Leu Gln Asp Asn Pro Ile Glu Thr Ser Gly Ala Arg Cys  
 450 455 460  
 Ser Ser Pro Arg Arg Leu Ala Asn Lys Arg Ile Ser Gln Ile Lys Ser  
 465 470 475 480  
 Lys Lys Phe Arg Cys Ser Gly Ser Glu Asp Tyr Arg Ser Arg Phe Ser  
 485 490 495  
 Ser Glu Cys Phe Met Asp Leu Val Cys Pro Glu Lys Cys Arg Cys Glu  
 500 505 510  
 Gly Thr Ile Val Asp Cys Ser Asn Gln Lys Leu Val Arg Ile Pro Ser  
 515 520 525  
 His Leu Pro Glu Tyr Val Thr Asp Leu Arg Leu Asn Asp Asn Glu Val  
 530 535 540  
 Ser Val Leu Glu Ala Thr Gly Ile Phe Lys Lys Leu Pro Asn Leu Arg  
 545 550 555 560  
 Lys Ile Asn Leu Ser Asn Asn Lys Ile Lys Glu Val Arg Glu Gly Ala  
 565 570 575  
 Phe Asp Gly Ala Ala Ser Val Gln Glu Leu Met Leu Thr Gly Asn Gln  
 580 585 590



Leu Glu Thr Val His Gly Arg Val Phe Arg Gly Leu Ser Gly Leu Lys  
 595 600 605  
 Thr Leu Met Leu Arg Ser Asn Leu Ile Gly Cys Val Ser Asn Asp Thr  
 610 615 620  
 Phe Ala Gly Leu Ser Ser Val Arg Leu Leu Ser Leu Tyr Asp Asn Arg  
 625 630 635 640  
 Ile Thr Thr Ile Thr Pro Gly Ala Phe Thr Thr Leu Val Ser Leu Ser  
 645 650 655  
 Thr Ile Asn Leu Leu Ser Asn Pro Phe Asn Cys Asn Cys His Leu Ala  
 660 665 670  
 Trp Leu Gly Lys Trp Leu Arg Lys Arg Arg Ile Val Ser Gly Asn Pro  
 675 680 685  
 Arg Cys Gln Lys Pro Phe Phe Leu Lys Glu Ile Pro Ile Gln Asp Val  
 690 695 700  
 Ala Ile Gln Asp Phe Thr Cys Asp Gly Asn Glu Glu Ser Ser Cys Gln  
 705 710 715 720  
 Leu Ser Pro Arg Cys Pro Glu Gln Cys Thr Cys Met Glu Thr Val Val  
 725 730 735  
 Arg Cys Ser Asn Lys Gly Leu Arg Ala Leu Pro Arg Gly Met Pro Lys  
 740 745 750  
 Asp Val Thr Glu Leu Tyr Leu Glu Gly Asn His Leu Thr Ala Val Pro  
 755 760 765  
 Arg Glu Leu Ser Ala Leu Arg His Leu Thr Leu Ile Asp Leu Ser Asn  
 770 775 780  
 Asn Ser Ile Ser Met Leu Thr Asn Tyr Thr Phe Ser Asn Met Ser His  
 785 790 795 800  
 Leu Ser Thr Leu Ile Leu Ser Tyr Asn Arg Leu Arg Cys Ile Pro Val  
 805 810 815  
 His Ala Phe Asn Gly Leu Arg Ser Leu Arg Val Leu Thr Leu His Gly  
 820 825 830  
 Asn Asp Ile Ser Ser Val Pro Glu Gly Ser Phe Asn Asp Leu Thr Ser  
 835 840 845  
 Leu Ser His Leu Ala Leu Gly Thr Asn Pro Leu His Cys Asp Cys Ser  
 850 855 860  
 Leu Arg Trp Leu Ser Glu Trp Val Lys Ala Gly Tyr Lys Glu Pro Gly  
 865 870 875 880  
 Ile Ala Arg Cys Ser Ser Pro Glu Pro Met Ala Asp Arg Leu Leu Leu  
 885 890 895

Thr Thr Pro Thr His Arg Phe Gln Cys Lys Gly Pro Val Asp Ile Asn  
 900 905 910  
 Ile Val Ala Lys Cys Asn Ala Cys Leu Ser Ser Pro Cys Lys Asn Asn  
 915 920 925  
 Gly Thr Cys Thr Gln Asp Pro Val Glu Leu Tyr Arg Cys Ala Cys Pro  
 930 935 940  
 Tyr Ser Tyr Lys Gly Lys Asp Cys Thr Val Pro Ile Asn Thr Cys Ile  
 945 950 955 960  
 Gln Asn Pro Cys Gln His Gly Gly Thr Cys His Leu Ser Asp Ser His  
 965 970 975  
 Lys Asp Gly Phe Ser Cys Ser Cys Pro Leu Gly Phe Glu Gly Gln Arg  
 980 985 990  
 Cys Glu Ile Asn Pro Asp Asp Cys Glu Asp Asn Asp Cys Glu Asn Asn  
 995 1000 1005  
 Ala Thr Cys Val Asp Gly Ile Asn Asn Tyr Val Cys Ile Cys Pro Pro  
 1010 1015 1020  
 Asn Tyr Thr Gly Glu Leu Cys Asp Glu Val Ile Asp His Cys Val Pro  
 1025 1030 1035 1040  
 Glu Leu Asn Leu Cys Gln His Glu Ala Lys Cys Ile Pro Leu Asp Lys  
 1045 1050 1055  
 Gly Phe Ser Cys Glu Cys Val Pro Gly Tyr Ser Gly Lys Leu Cys Glu  
 1060 1065 1070  
 Thr Asp Asn Asp Asp Cys Val Ala His Lys Cys Arg His Gly Ala Gln  
 1075 1080 1085  
 Cys Val Asp Thr Ile Asn Gly Tyr Thr Cys Thr Cys Pro Gln Gly Phe  
 1090 1095 1100  
 Ser Gly Pro Phe Cys Glu His Pro Pro Pro Met Val Leu Leu Gln Thr  
 1105 1110 1115 1120  
 Ser Pro Cys Asp Gln Tyr Glu Cys Gln Asn Gly Ala Gln Cys Ile Val  
 1125 1130 1135  
 Val Gln Gln Glu Pro Thr Cys Arg Cys Pro Pro Gly Phe Ala Gly Pro  
 1140 1145 1150  
 Arg Cys Glu Lys Leu Ile Thr Val Asn Phe Val Gly Lys Asp Ser Tyr  
 1155 1160 1165  
 Val Glu Leu Ala Ser Ala Lys Val Arg Pro Gln Ala Asn Ile Ser Leu  
 1170 1175 1180  
 Gln Val Ala Thr Asp Lys Asp Asn Gly Ile Leu Leu Tyr Lys Gly Asp  
 1185 1190 1195 1200

Asn Asp Pro Leu Ala Leu Glu Leu Tyr Gln Gly His Val Arg Leu Val  
 1205 1210 1215  
 Tyr Asp Ser Leu Ser Ser Pro Pro Thr Thr Val Tyr Ser Val Glu Thr  
 1220 1225 1230  
 Val Asn Asp Gly Gln Phe His Ser Val Glu Leu Val Thr Leu Asn Gln  
 1235 1240 1245  
 Thr Leu Asn Leu Val Val Asp Lys Gly Thr Pro Lys Ser Leu Gly Lys  
 1250 1255 1260  
 Leu Gln Lys Gln Pro Ala Val Gly Ile Asn Ser Pro Leu Tyr Leu Gly  
 1265 1270 1275 1280  
 Gly Ile Pro Thr Ser Thr Gly Leu Ser Ala Leu Arg Gln Gly Thr Asp  
 1285 1290 1295  
 Arg Pro Leu Gly Gly Phe His Gly Cys Ile His Glu Val Arg Ile Asn  
 1300 1305 1310  
 Asn Glu Leu Gln Asp Phe Lys Ala Leu Pro Pro Gln Ser Leu Gly Val  
 1315 1320 1325  
 Ser Pro Gly Cys Lys Ser Cys Thr Val Cys Lys His Gly Leu Cys Arg  
 1330 1335 1340  
 Ser Val Glu Lys Asp Ser Val Val Cys Glu Cys Arg Pro Gly Trp Thr  
 1345 1350 1355 1360  
 Gly Pro Leu Cys Asp Gln Glu Ala Arg Asp Pro Cys Leu Gly His Arg  
 1365 1370 1375  
 Cys His His Gly Lys Cys Val Ala Thr Gly Thr Ser Tyr Met Cys Lys  
 1380 1385 1390  
 Cys Ala Glu Gly Tyr Gly Gly Asp Leu Cys Asp Asn Lys Asn Asp Ser  
 1395 1400 1405  
 Ala Asn Ala Cys Ser Ala Phe Lys Cys His His Gly Gln Cys His Ile  
 1410 1415 1420  
 Ser Asp Gln Gly Glu Pro Tyr Cys Leu Cys Gln Pro Gly Phe Ser Gly  
 1425 1430 1435 1440  
 Glu His Cys Gln Gln Glu Asn Pro Cys Leu Gly Gln Val Val Arg Glu  
 1445 1450 1455  
 Val Ile Arg Arg Gln Lys Gly Tyr Ala Ser Cys Ala Thr Ala Ser Lys  
 1460 1465 1470  
 Val Pro Ile Met Glu Cys Arg Gly Gly Cys Gly Pro Gln Cys Cys Gln  
 1475 1480 1485  
 Pro Thr Arg Ser Lys Arg Arg Lys Tyr Val Phe Gln Cys Thr Asp Gly  
 1490 1495 1500

Ser Ser Phe Val Glu Glu Val Glu Arg His Leu Glu Cys Gly Cys Leu  
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Ala Cys Ser

<210> 30  
 <211> 1534  
 <212> PRT  
 <213> *Drosophila melanogaster*

<400> 30

Met Ala Leu Thr Pro Gly Trp Gly Ser Ser Ala Gly Pro Val Arg Pro  
 1 5 10 15

Glu Leu Trp Leu Leu Leu Trp Ala Ala Ala Trp Arg Leu Gly Ala Ser  
 20 25 30

Ala Cys Pro Ala Leu Cys Thr Cys Thr Gly Thr Thr Val Asp Cys His  
 35 40 45

Gly Thr Gly Leu Gln Ala Ile Pro Lys Asn Ile Pro Arg Asn Thr Glu  
 50 55 60

Arg Leu Glu Leu Asn Gly Asn Asn Ile Thr Arg Ile His Lys Asn Asp  
 65 70 75 80

Phe Ala Gly Leu Lys Gln Leu Arg Val Leu Gln Leu Met Glu Asn Gln  
 85 90 95

Ile Gly Ala Val Glu Arg Gly Ala Phe Asp Asp Met Lys Glu Leu Glu  
 100 105 110

Arg Leu Arg Leu Asn Arg Asn Gln Leu His Met Leu Pro Glu Leu Leu  
 115 120 125

Phe Gln Asn Asn Gln Ala Leu Ser Arg Leu Asp Leu Ser Glu Asn Ala  
 130 135 140

Ile Gln Ala Ile Pro Arg Lys Ala Phe Arg Gly Ala Thr Asp Leu Lys  
 145 150 155 160

Asn Leu Arg Leu Asp Lys Asn Gln Ile Ser Cys Ile Glu Glu Gly Ala  
 165 170 175

Phe Arg Ala Leu Arg Gly Leu Glu Val Leu Thr Leu Asn Asn Asn Asn  
 180 185 190

Ile Thr Thr Ile Pro Val Ser Ser Phe Asn His Met Pro Lys Leu Arg  
 195 200 205

Thr Phe Arg Leu His Ser Asn His Leu Phe Cys Asp Cys His Leu Ala  
 210 215 220

Trp Leu Ser Gln Trp Leu Arg Gln Arg Pro Thr Ile Gly Leu Phe Thr

225		230		235		240
Gln Cys Ser Gly	Pro Ala Ser Leu Arg	Gly Leu Asn Val	Ala Glu Val			
	245	250	255			
Gln Lys Ser Glu Phe Ser Cys Ser	Gly Gln Gly Glu Ala Gly Arg Val					
	260	265	270			
Pro Thr Cys Thr Leu Ser Ser	Gly Ser Cys Pro Ala Met Cys Thr Cys					
	275	280	285			
Ser Asn Gly Ile Val Asp Cys Arg Gly Lys Gly	Leu Thr Ala Ile Pro					
	290	295	300			
Ala Asn Leu Pro Glu Thr Met Thr Glu Ile Arg	Leu Glu Leu Asn Gly					
305	310	315	320			
Ile Lys Ser Ile Pro Pro Gly Ala Phe Ser Pro Tyr Arg Lys Leu Arg						
	325	330	335			
Arg Ile Asp Leu Ser Asn Asn Gln Ile Ala Glu Ile Ala Pro Asp Ala						
	340	345	350			
Phe Gln Gly Leu Arg Ser Leu Asn Ser Leu Val Leu Tyr Gly Asn Lys						
	355	360	365			
Ile Thr Asp Leu Pro Arg Gly Val Phe Gly Gly Leu Tyr Thr Leu Gln						
	370	375	380			
Leu Leu Leu Leu Asn Ala Asn Lys Ile Asn Cys Ile Arg Pro Asp Ala						
385	390	395	400			
Phe Gln Asp Leu Gln Asn Leu Ser Leu Leu Ser Leu Tyr Asp Asn Lys						
	405	410	415			
Ile Gln Ser Leu Ala Lys Gly Thr Phe Thr Ser Leu Arg Ala Ile Gln						
	420	425	430			
Thr Leu His Leu Ala Gln Asn Pro Phe Ile Cys Asp Cys Asn Leu Lys						
	435	440	445			
Trp Leu Ala Asp Phe Leu Arg Thr Asn Pro Ile Glu Thr Ser Gly Ala						
	450	455	460			
Arg Cys Ala Ser Pro Arg Arg Leu Ala Asn Lys Arg Ile Gly Gln Ile						
465	470	475	480			
Lys Ser Lys Lys Phe Arg Cys Ser Ala Lys Glu Gln Tyr Phe Ile Pro						
	485	490	495			
Gly Thr Glu Asp Tyr Gln Leu Asn Ser Glu Cys Asn Ser Asp Val Val						
	500	505	510			
Cys Pro His Lys Cys Arg Cys Glu Ala Asn Val Val Glu Cys Ser Ser						
	515	520	525			
Leu Lys Leu Thr Lys Ile Pro Glu Arg Ile Pro Gln Ser Thr Ala Glu						

530	535	540
Leu Arg Leu Asn Asn Asn Glu Ile Ser Ile Leu Glu Ala Thr Gly Met 545	550	555 560
Phe Lys Lys Leu Thr His Leu Lys Lys Ile Asn Leu Ser Asn Asn Lys 565	570	575
Val Ser Glu Ile Glu Asp Gly Ala Phe Glu Gly Ala Ala Ser Val Ser 580	585	590
Glu Leu His Leu Thr Ala Asn Gln Leu Glu Ser Ile Arg Ser Gly Met 595	600	605
Phe Arg Gly Leu Asp Gly Leu Arg Thr Leu Met Leu Arg Asn Asn Arg 610	615	620
Ile Ser Cys Ile His Asn Asp Ser Phe Thr Gly Leu Arg Asn Val Arg 625	630	635 640
Leu Leu Ser Leu Tyr Asp Asn Gln Ile Thr Thr Val Ser Pro Gly Ala 645	650	655
Phe Asp Thr Leu Gln Ser Leu Ser Thr Leu Asn Leu Leu Ala Asn Pro 660	665	670
Phe Asn Cys Asn Cys Gln Leu Ala Trp Leu Gly Gly Trp Leu Arg Lys 675	680	685
Arg Lys Ile Val Thr Gly Asn Pro Arg Cys Gln Asn Pro Asp Phe Leu 690	695	700
Arg Gln Ile Pro Leu Gln Asp Val Ala Phe Pro Asp Phe Arg Cys Glu 705	710	715 720
Glu Gly Gln Glu Glu Gly Gly Cys Leu Pro Arg Pro Gln Cys Pro Gln 725	730	735
Glu Cys Ala Cys Leu Asp Thr Val Val Arg Cys Ser Asn Lys His Leu 740	745	750
Arg Ala Leu Pro Lys Gly Ile Pro Lys Asn Val Thr Glu Leu Tyr Leu 755	760	765
Asp Gly Asn Gln Phe Thr Leu Val Pro Gly Gln Leu Ser Thr Phe Lys 770	775	780
Tyr Leu Gln Leu Val Asp Leu Ser Asn Asn Lys Ile Ser Ser Leu Ser 785	790	795 800
Asn Ser Ser Phe Thr Asn Met Ser Gln Leu Thr Thr Leu Ile Leu Ser 805	810	815
Tyr Asn Ala Leu Gln Cys Ile Pro Pro Leu Ala Phe Gln Gly Leu Arg 820	825	830
Ser Leu Arg Leu Leu Ser Leu His Gly Asn Asp Ile Ser Thr Leu Gln		

835					840					845				
Glu Gly Ile Phe Ala Asp Val Thr Ser Leu Ser His Leu Ala Ile Gly	850				855					860				
Ala Asn Pro Leu Tyr Cys Asp Cys His Leu Arg Trp Leu Ser Ser Trp	865				870					875			880	
Val Lys Thr Gly Tyr Lys Glu Pro Gly Ile Ala Arg Cys Ala Gly Pro				885					890				895	
Gln Asp Met Glu Gly Lys Leu Leu Leu Thr Thr Pro Ala Lys Lys Phe			900					905				910		
Glu Cys Gln Gly Pro Pro Thr Leu Ala Val Gln Ala Lys Cys Asp Leu			915				920					925		
Cys Leu Ser Ser Pro Cys Gln Asn Gln Gly Thr Cys His Asn Asp Pro			930				935					940		
Leu Glu Val Tyr Arg Cys Ala Cys Pro Ser Gly Tyr Lys Gly Arg Asp			945				950			955			960	
Cys Glu Val Ser Leu Asn Ser Cys Ser Ser Gly Pro Cys Glu Asn Gly				965					970				975	
Gly Thr Cys His Ala Gln Glu Gly Glu Asp Ala Pro Phe Thr Cys Ser				980				985					990	
Cys Pro Thr Gly Phe Glu Gly Pro Thr Cys Gly Val Asn Thr Asp Asp				995			1000					1005		
Cys Val Asp His Ala Cys Ala Asn Gly Gly Val Cys Val Asp Gly Val			1010				1015					1020		
Gly Asn Tyr Thr Cys Gln Cys Pro Leu Gln Tyr Glu Gly Lys Ala Cys			1025				1030			1035			1040	
Glu Gln Leu Val Asp Leu Cys Ser Pro Asp Leu Asn Pro Cys Gln His				1045				1050					1055	
Glu Ala Gln Cys Val Gly Thr Pro Asp Gly Pro Arg Cys Glu Cys Met				1060				1065					1070	
Pro Gly Tyr Ala Gly Asp Asn Cys Ser Glu Asn Gln Asp Asp Cys Arg				1075				1080				1085		
Asp His Arg Cys Gln Asn Gly Ala Gln Cys Met Asp Glu Val Asn Ser				1090				1095				1100		
Tyr Ser Cys Leu Cys Ala Glu Gly Tyr Ser Gly Gln Leu Cys Glu Ile				1105				1110				1115	1120	
Pro Pro His Leu Pro Ala Pro Lys Ser Pro Cys Glu Gly Thr Glu Cys				1125					1130				1135	
Gln Asn Gly Ala Asn Cys Val Asp Gln Gly Asn Arg Pro Val Cys Gln														

1140	1145	1150
Cys Leu Pro Gly Phe Gly Gly Pro Glu Cys Glu Lys Leu Leu Ser Val		
1155	1160	1165
Asn Phe Val Asp Arg Asp Thr Tyr Leu Gln Phe Thr Asp Leu Gln Asn		
1170	1175	1180
Trp Pro Arg Ala Asn Ile Thr Leu Gln Val Ser Thr Ala Glu Asp Asn		
1185	1190	1195
Gly Ile Leu Leu Tyr Asn Gly Asp Asn Asp His Ile Ala Val Glu Leu		
1205	1210	1215
Tyr Gln Gly His Val Arg Val Ser Tyr Asp Pro Gly Ser Tyr Pro Ser		
1220	1225	1230
Ser Ala Ile Tyr Ser Ala Glu Thr Ile Asn Asp Gly Gln Phe His Thr		
1235	1240	1245
Val Glu Leu Val Ala Phe Asp Gln Met Val Asn Leu Ser Ile Asp Gly		
1250	1255	1260
Gly Ser Pro Met Thr Met Asp Asn Phe Gly Lys His Tyr Thr Leu Asn		
1265	1270	1275
Ser Glu Ala Pro Leu Tyr Val Gly Gly Met Pro Val Asp Val Asn Ser		
1285	1290	1295
Ala Ala Phe Arg Leu Trp Gln Ile Leu Asn Gly Thr Gly Phe His Gly		
1300	1305	1310
Cys Ile Arg Asn Leu Tyr Ile Asn Asn Glu Leu Gln Asp Phe Thr Lys		
1315	1320	1325
Thr Gln Met Lys Pro Gly Val Val Pro Gly Cys Glu Pro Cys Arg Lys		
1330	1335	1340
Leu Tyr Cys Leu His Gly Ile Cys Gln Pro Asn Ala Thr Pro Gly Pro		
1345	1350	1355
Met Cys His Cys Glu Ala Gly Trp Val Gly Leu His Cys Asp Gln Pro		
1365	1370	1375
Ala Asp Gly Pro Cys His Gly His Lys Cys Val His Gly Gln Cys Val		
1380	1385	1390
Pro Leu Asp Ala Leu Ser Tyr Ser Cys Gln Cys Gln Asp Gly Tyr Ser		
1395	1400	1405
Gly Ala Leu Cys Asn Gln Ala Gly Ala Leu Ala Glu Pro Cys Arg Gly		
1410	1415	1420
Leu Gln Cys Leu His Gly His Cys Gln Ala Ser Gly Thr Lys Gly Ala		
1425	1430	1435
His Cys Val Cys Asp Pro Gly Phe Ser Gly Glu Leu Cys Glu Gln Glu		



1445	1450	1455
Ser Glu Cys Arg Gly Asp Pro Val Arg Asp Phe His Gln Val Gln Arg		
1460	1465	1470
Gly Tyr Ala Ile Cys Gln Thr Thr Arg Pro Leu Ser Trp Val Glu Cys		
1475	1480	1485
Arg Gly Ser Cys Pro Gly Gln Gly Cys Cys Gln Gly Leu Arg Leu Lys		
1490	1495	1500
Arg Arg Lys Phe Thr Phe Glu Cys Ser Asp Gly Thr Ser Phe Ala Glu		
1505	1510	1515
		1520
Glu Val Glu Lys Pro Thr Lys Cys Gly Cys Ala Leu Cys Ala		
1525	1530	

<210> 31  
 <211> 1531  
 <212> PRT  
 <213> Rattus norvegicus

<400> 31															
Met	Ala	Leu	Thr	Pro	Gln	Arg	Gly	Ser	Ser	Ser	Gly	Leu	Ser	Arg	Pro
1				5					10					15	
Glu	Leu	Trp	Leu	Leu	Leu	Trp	Ala	Ala	Ala	Trp	Arg	Leu	Gly	Ala	Thr
			20					25					30		
Ala	Cys	Pro	Ala	Leu	Cys	Thr	Cys	Thr	Gly	Thr	Thr	Val	Asp	Cys	His
	35						40						45		
Gly	Thr	Gly	Leu	Gln	Ala	Ile	Pro	Lys	Asn	Ile	Pro	Arg	Asn	Thr	Glu
50						55					60				
Arg	Leu	Glu	Leu	Asn	Gly	Asn	Asn	Ile	Thr	Arg	Ile	His	Lys	Asn	Asp
65					70					75				80	
Phe	Ala	Gly	Leu	Lys	Gln	Leu	Arg	Val	Leu	Gln	Leu	Met	Glu	Asn	Gln
				85					90					95	
Ile	Gly	Ala	Val	Glu	Arg	Gly	Ala	Phe	Asp	Asp	Met	Lys	Glu	Leu	Glu
			100					105					110		
Arg	Leu	Arg	Leu	Asn	Arg	Asn	Gln	Leu	Gln	Val	Leu	Pro	Glu	Leu	Leu
	115					120						125			
Phe	Gln	Asn	Asn	Gln	Ala	Leu	Ser	Arg	Leu	Asp	Leu	Ser	Glu	Asn	Ser
130						135					140				
Leu	Gln	Ala	Val	Pro	Arg	Lys	Ala	Phe	Arg	Gly	Ala	Thr	Asp	Leu	Lys
145					150					155				160	
Asn	Leu	Gln	Leu	Asp	Lys	Asn	Gln	Ile	Ser	Cys	Ile	Glu	Glu	Gly	Ala
			165						170					175	

Phe	Arg	Ala	Leu	Arg	Gly	Leu	Glu	Val	Leu	Thr	Leu	Asn	Asn	Asn	Asn	180	185	190
Ile	Thr	Thr	Ile	Pro	Val	Ser	Ser	Phe	Asn	His	Met	Pro	Lys	Leu	Arg	195	200	205
Thr	Phe	Arg	Leu	His	Ser	Asn	His	Leu	Phe	Cys	Asp	Cys	His	Leu	Ala	210	215	220
Trp	Leu	Ser	Gln	Trp	Leu	Arg	Gln	Arg	Pro	Thr	Ile	Gly	Leu	Phe	Thr	225	230	235
Gln	Cys	Ser	Gly	Pro	Ala	Ser	Leu	Arg	Gly	Leu	Asn	Val	Ala	Glu	Val	245	250	255
Gln	Lys	Ser	Glu	Phe	Ser	Cys	Ser	Gly	Gln	Gly	Glu	Ala	Ala	Gln	Val	260	265	270
Pro	Ala	Cys	Thr	Leu	Ser	Ser	Gly	Ser	Cys	Pro	Ala	Met	Cys	Ser	Cys	275	280	285
Ser	Asn	Gly	Ile	Val	Asp	Cys	Arg	Gly	Lys	Gly	Leu	Thr	Ala	Ile	Pro	290	295	300
Ala	Asn	Leu	Pro	Glu	Thr	Met	Thr	Glu	Ile	Arg	Leu	Glu	Leu	Asn	Gly	305	310	315
Ile	Lys	Ser	Ile	Pro	Pro	Gly	Ala	Phe	Ser	Pro	Tyr	Arg	Lys	Leu	Arg	325	330	335
Arg	Ile	Asp	Leu	Ser	Asn	Asn	Gln	Ile	Ala	Glu	Ile	Ala	Pro	Asp	Ala	340	345	350
Phe	Gln	Gly	Leu	Arg	Ser	Leu	Asn	Ser	Leu	Val	Leu	Tyr	Gly	Asn	Lys	355	360	365
Ile	Thr	Asp	Leu	Pro	Arg	Gly	Val	Phe	Gly	Gly	Leu	Tyr	Thr	Leu	Gln	370	375	380
Leu	Leu	Leu	Leu	Asn	Ala	Asn	Lys	Ile	Asn	Cys	Ile	Arg	Pro	Asp	Ala	385	390	395
Phe	Gln	Asp	Leu	Gln	Asn	Leu	Ser	Leu	Leu	Ser	Leu	Tyr	Asp	Asn	Lys	405	410	415
Ile	Gln	Ser	Leu	Ala	Lys	Gly	Thr	Phe	Thr	Ser	Leu	Arg	Ala	Ile	Gln	420	425	430
Thr	Leu	His	Leu	Ala	Gln	Asn	Pro	Phe	Ile	Cys	Asp	Cys	Asn	Leu	Lys	435	440	445
Trp	Leu	Ala	Asp	Phe	Leu	Arg	Thr	Asn	Pro	Ile	Glu	Thr	Thr	Gly	Ala	450	455	460
Arg	Cys	Ala	Ser	Pro	Arg	Arg	Leu	Ala	Asn	Lys	Arg	Ile	Gly	Gln	Ile	465	470	475
																480		

Lys	Ser	Lys	Lys	Phe	Arg	Cys	Ser	Ala	Lys	Glu	Gln	Tyr	Phe	Ile	Pro	485	490	495
Gly	Thr	Glu	Asp	Tyr	His	Leu	Asn	Ser	Glu	Cys	Thr	Ser	Asp	Val	Ala	500	505	510
Cys	Pro	His	Lys	Cys	Arg	Cys	Glu	Ala	Ser	Val	Val	Glu	Cys	Ser	Gly	515	520	525
Leu	Lys	Leu	Ser	Lys	Ile	Pro	Glu	Arg	Ile	Pro	Gln	Ser	Thr	Thr	Glu	530	535	540
Leu	Arg	Leu	Asn	Asn	Asn	Glu	Ile	Ser	Ile	Leu	Glu	Ala	Thr	Gly	Leu	545	550	555
Phe	Lys	Lys	Leu	Ser	His	Leu	Lys	Lys	Ile	Asn	Leu	Ser	Asn	Asn	Lys	565	570	575
Val	Ser	Glu	Ile	Glu	Asp	Gly	Thr	Phe	Glu	Gly	Ala	Thr	Ser	Val	Ser	580	585	590
Glu	Leu	His	Leu	Thr	Ala	Asn	Gln	Leu	Glu	Ser	Val	Arg	Ser	Gly	Met	595	600	605
Phe	Arg	Gly	Leu	Asp	Gly	Leu	Arg	Thr	Leu	Met	Leu	Arg	Asn	Asn	Arg	610	615	620
Ile	Ser	Cys	Ile	His	Asn	Asp	Ser	Phe	Thr	Gly	Leu	Arg	Asn	Val	Arg	625	630	635
Leu	Leu	Ser	Leu	Tyr	Asp	Asn	His	Ile	Thr	Thr	Ile	Ser	Pro	Gly	Ala	645	650	655
Phe	Asp	Thr	Leu	Gln	Ala	Leu	Ser	Thr	Leu	Asn	Leu	Leu	Ala	Asn	Pro	660	665	670
Phe	Asn	Cys	Asn	Cys	Gln	Leu	Ala	Trp	Leu	Gly	Asp	Trp	Leu	Arg	Lys	675	680	685
Arg	Lys	Ile	Val	Thr	Gly	Asn	Pro	Arg	Cys	Gln	Asn	Pro	Asp	Phe	Leu	690	695	700
Arg	Gln	Ile	Pro	Leu	Gln	Asp	Val	Ala	Phe	Pro	Asp	Phe	Arg	Cys	Glu	705	710	715
Glu	Gly	Gln	Glu	Glu	Val	Gly	Cys	Leu	Pro	Arg	Pro	Gln	Cys	Pro	Gln	725	730	735
Glu	Cys	Ala	Cys	Leu	Asp	Thr	Val	Val	Arg	Cys	Ser	Asn	Lys	His	Leu	740	745	750
Gln	Ala	Leu	Pro	Lys	Gly	Ile	Pro	Lys	Asn	Val	Thr	Glu	Leu	Tyr	Leu	755	760	765
Asp	Gly	Asn	Gln	Phe	Thr	Leu	Val	Pro	Gly	Gln	Leu	Ser	Thr	Phe	Lys	770	775	780

Tyr Leu Gln Leu Val Asp Leu Ser Asn Asn Lys Ile Ser Ser Leu Ser  
 785 790 795 800  
 Asn Ser Ser Phe Thr Asn Met Ser Gln Leu Thr Thr Leu Ile Leu Ser  
 805 810 815  
 Tyr Asn Ala Leu Gln Cys Ile Pro Pro Leu Ala Phe Gln Gly Leu Arg  
 820 825 830  
 Ser Leu Arg Leu Leu Ser Leu His Gly Asn Asp Val Ser Thr Leu Gln  
 835 840 845  
 Glu Gly Ile Phe Ala Asp Val Thr Ser Leu Ser His Leu Ala Ile Gly  
 850 855 860  
 Ala Asn Pro Leu Tyr Cys Asp Cys His Leu Arg Trp Leu Ser Ser Trp  
 865 870 875 880  
 Val Lys Thr Gly Tyr Lys Glu Pro Gly Ile Ala Arg Cys Ala Gly Pro  
 885 890 895  
 Pro Glu Met Glu Gly Lys Leu Leu Leu Thr Thr Pro Ala Lys Lys Phe  
 900 905 910  
 Glu Cys Gln Gly Pro Pro Ser Leu Ala Val Gln Ala Lys Cys Asp Pro  
 915 920 925  
 Cys Leu Ser Ser Pro Cys Gln Asn Gln Gly Thr Cys His Asn Asp Pro  
 930 935 940  
 Leu Glu Val Tyr Arg Cys Thr Cys Pro Ser Gly Tyr Lys Gly Arg Asn  
 945 950 955 960  
 Cys Glu Val Ser Leu Asp Ser Cys Ser Ser Asn Pro Cys Gly Asn Gly  
 965 970 975  
 Gly Thr Cys His Ala Gln Glu Gly Glu Asp Ala Gly Phe Thr Cys Ser  
 980 985 990  
 Cys Pro Ser Gly Phe Glu Gly Leu Thr Cys Gly Met Asn Thr Asp Asp  
 995 1000 1005  
 Cys Val Lys His Asp Cys Val Asn Gly Gly Val Cys Val Asp Gly Ile  
 1010 1015 1020  
 Gly Asn Tyr Thr Cys Gln Cys Pro Leu Gln Tyr Thr Gly Arg Ala Cys  
 1025 1030 1035 1040  
 Glu Gln Leu Val Asp Phe Cys Ser Pro Asp Leu Asn Pro Cys Gln His  
 1045 1050 1055  
 Glu Ala Gln Cys Val Gly Thr Pro Glu Gly Pro Arg Cys Glu Cys Val  
 1060 1065 1070  
 Pro Gly Tyr Thr Gly Asp Asn Cys Ser Lys Asn Gln Asp Asp Cys Lys  
 1075 1080 1085

Asp His Gln Cys Gln Asn Gly Ala Gln Cys Val Asp Glu Ile Asn Ser  
 1090 1095 1100  
 Tyr Ala Cys Leu Cys Ala Glu Gly Tyr Ser Gly Gln Leu Cys Glu Ile  
 1105 1110 1115 1120  
 Pro Pro Ala Pro Arg Asn Ser Cys Glu Gly Thr Glu Cys Gln Asn Gly  
 1125 1130 1135  
 Ala Asn Cys Val Asp Gln Gly Ser Arg Pro Val Cys Gln Cys Leu Pro  
 1140 1145 1150  
 Gly Phe Gly Gly Pro Glu Cys Glu Lys Leu Leu Ser Val Asn Phe Val  
 1155 1160 1165  
 Asp Arg Asp Thr Tyr Leu Gln Phe Thr Asp Leu Gln Asn Trp Pro Arg  
 1170 1175 1180  
 Ala Asn Ile Thr Leu Gln Val Ser Thr Ala Glu Asp Asn Gly Ile Leu  
 1185 1190 1195 1200  
 Leu Tyr Asn Gly Asp Asn Asp His Ile Ala Val Glu Leu Tyr Gln Gly  
 1205 1210 1215  
 His Val Arg Val Ser Tyr Asp Pro Gly Ser Tyr Pro Ser Ser Ala Ile  
 1220 1225 1230  
 Tyr Ser Ala Glu Thr Ile Asn Asp Gly Gln Phe His Thr Val Glu Leu  
 1235 1240 1245  
 Val Thr Phe Asp Gln Met Val Asn Leu Ser Ile Asp Gly Gly Ser Pro  
 1250 1255 1260  
 Met Thr Met Asp Asn Phe Gly Lys His Tyr Thr Leu Asn Ser Glu Ala  
 1265 1270 1275 1280  
 Pro Leu Tyr Val Gly Gly Met Pro Val Asp Val Asn Ser Ala Ala Phe  
 1285 1290 1295  
 Arg Leu Trp Gln Ile Leu Asn Gly Thr Ser Phe His Gly Cys Ile Arg  
 1300 1305 1310  
 Asn Leu Tyr Ile Asn Asn Glu Leu Gln Asp Phe Thr Lys Thr Gln Met  
 1315 1320 1325  
 Lys Pro Gly Val Val Pro Gly Cys Glu Pro Cys Arg Lys Leu Tyr Cys  
 1330 1335 1340  
 Leu His Gly Ile Cys Gln Pro Asn Ala Thr Pro Gly Pro Val Cys His  
 1345 1350 1355 1360  
 Cys Glu Ala Gly Trp Gly Gly Leu His Cys Asp Gln Pro Val Asp Gly  
 1365 1370 1375  
 Pro Cys His Gly His Lys Cys Val His Gly Lys Cys Val Pro Leu Asp  
 1380 1385 1390

Ala Leu Ala Tyr Ser Cys Gln Cys Gln Asp Gly Tyr Ser Gly Ala Leu  
1395 1400 1405

Cys Asn Gln Val Gly Ala Val Ala Glu Pro Cys Gly Gly Leu Gln Cys  
1410 1415 1420

Leu His Gly His Cys Gln Ala Ser Ala Thr Arg Gly Ala His Cys Val  
1425 1430 1435 1440

Cys Ser Pro Gly Phe Ser Gly Glu Leu Cys Glu Gln Glu Ser Glu Cys  
1445 1450 1455

Arg Gly Asp Pro Val Arg Asp Phe His Arg Val Gln Arg Gly Tyr Ala  
1460 1465 1470

Ile Cys Gln Thr Thr Arg Pro Leu Ser Trp Val Glu Cys Arg Gly Ala  
1475 1480 1485

Cys Pro Gly Gln Gly Cys Cys Gln Gly Leu Arg Leu Lys Arg Arg Lys  
1490 1495 1500

Leu Thr Phe Glu Cys Ser Asp Gly Thr Ser Phe Ala Glu Glu Val Glu  
1505 1510 1515 1520

Lys Pro Thr Lys Cys Gly Cys Ala Pro Cys Ala  
1525 1530

<210> 32

<211> 1512

<212> PRT

<213> Danio rerio

<400> 32

Met Phe Val Leu Lys Ser Val Val Leu Cys Ala Leu Leu Cys Gly Ala  
1 5 10 15

Gly Ala Gln Ser Cys Pro Ser Gln Cys Ser Cys Ser Gly Thr Ala Val  
20 25 30

Asp Cys His Gly Gln Ser Leu Arg Ser Val Pro Arg Asn Ile Pro Arg  
35 40 45

Asn Val Glu Arg Leu Asp Leu Asn Ala Asn Asn Leu Thr Lys Ile Thr  
50 55 60

Lys Ala Asp Phe Ala Gly Leu Lys Asn Leu Arg Val Leu Gln Leu Met  
65 70 75 80

Glu Asn Lys Ile Ser Ser Ile Glu Arg Gly Ala Phe Gln Asp Leu Gln  
85 90 95

Glu Leu Glu Arg Leu Arg Leu Asn Arg Asn Asn Leu Gln Val Leu Pro  
100 105 110

Glu Leu Leu Phe Leu Gly Thr Thr Lys Leu Phe Arg Leu Asp Leu Ser  
115 120 125

Glu Asn Gln Ile Gln Gly Ile Pro Arg Lys Ala Phe Arg Gly Ser Thr  
 130 135 140

Glu Ile Lys Asn Leu Gln Leu Asp Tyr Asn Gln Ile Ser Cys Ile Glu  
 145 150 155 160

Asp Gly Ala Phe Arg Ala Leu Gly Asp Leu Glu Val Leu Thr Leu Asn  
 165 170 175

Asn Asn Asn Ile Ser Arg Leu Ser Val Ala Ser Phe Asn His Met Pro  
 180 185 190

Lys Leu Arg Thr Phe Arg Leu His Ser Asn Asn Leu Leu Cys Asp Cys  
 195 200 205

Asn Val Ala Trp Leu Ser Asp Trp Leu Arg Gln Arg Pro Arg Leu Gly  
 210 215 220

Leu Tyr Thr Gln Cys Met Ala Pro Pro Ser Leu Arg Gly His Asn Ile  
 225 230 235 240

Ala Glu Val Gln Lys Lys Glu Phe Met Cys Thr Gly Pro Gln Ser His  
 245 250 255

Ser Ser Cys Ser Val Leu Gln Cys Pro Glu Leu Cys Thr Cys Ser Asn  
 260 265 270

Asn Val Val Asp Cys Arg Gly Lys Gly Leu Thr Glu Ile Pro Thr Asn  
 275 280 285

Leu Pro Glu Thr Ile Thr Glu Ile Arg Leu Glu Gln Asn Ser Ile Lys  
 290 295 300

Ile Ile Pro Ala Gly Ala Phe Ala Pro Tyr Lys Arg Leu Arg Arg Ile  
 305 310 315 320

Asp Leu Ser Asn Asn Gln Ile Thr Glu Leu Ala Ser Asp Ser Phe Gln  
 325 330 335

Gly Leu Arg Ser Leu Asn Ser Leu Val Leu Tyr Gly Asn Lys Ile Thr  
 340 345 350

Glu Leu Pro Lys Gly Leu Phe Asp Gly Leu Phe Ser Leu Gln Leu Leu  
 355 360 365

Leu Leu Asn Ala Asn Lys Ile Asn Cys Leu Arg Val Asp Ser Phe Gln  
 370 375 380

Asp Leu Gln Asn Leu Asn Leu Leu Ser Leu Tyr Asp Asn Lys Leu Gln  
 385 390 395 400

Thr Ile Ala Lys Gly Thr Phe Ser Ser Leu Arg Ala Ile Gln Thr Leu  
 405 410 415

His Leu Ala Gln Asn Pro Phe Met Cys Asp Cys His Leu Lys Trp Leu  
 420 425 430

Ala Asp Tyr Leu Gln Asp Asn Pro Ile Glu Thr Ser Gly Ala Arg Cys  
 435 440 445  
 Thr Ser Pro Arg Arg Leu Ala Asn Lys Arg Ile Gly Gln Ile Lys Ser  
 450 455 460  
 Lys Lys Phe Arg Cys Ser Gly Val Glu Asp Tyr Arg Ser Lys Leu Gly  
 465 470 475 480  
 Gly Asp Cys Phe Ala Asp Leu Ala Cys Pro Glu Lys Cys Arg Cys Glu  
 485 490 495  
 Gly Thr Thr Val Asp Cys Ser Gly Gln Lys Leu Thr Lys Ile Pro Asp  
 500 505 510  
 His Ile Pro Gln Tyr Thr Ala Glu Leu Arg Leu Asn Asn Asn Glu Phe  
 515 520 525  
 Thr Val Leu Glu Ala Thr Gly Ile Phe Lys Lys Leu Pro Gln Leu Arg  
 530 535 540  
 Lys Ile Asn Leu Ser Asn Asn Lys Ile Thr Asp Ile Glu Glu Gly Thr  
 545 550 555 560  
 Phe Glu Gly Ala Ser Gly Val Asn Glu Leu Ile Leu Thr Ser Asn Arg  
 565 570 575  
 Leu Glu Gly Val His Tyr Ser Met Leu Lys Gly Leu Gly Gly Leu Arg  
 580 585 590  
 Thr Leu Met Leu Arg Ser Asn Arg Ile Ser Cys Val Asn Asn Gly Ser  
 595 600 605  
 Phe Thr Gly Leu Ser Ser Val Arg Leu Leu Ser Leu Tyr Asp Asn Leu  
 610 615 620  
 Ile Thr Ser Met Ser Pro Gly Ala Phe Asp Thr Leu His Ser Leu Ser  
 625 630 635 640  
 Thr Leu Asn Leu Leu Ala Asn Pro Phe Asn Cys Asn Cys His Leu Ala  
 645 650 655  
 Trp Leu Gly Glu Trp Leu Arg Lys Lys Arg Ile Val Thr Gly Asn Pro  
 660 665 670  
 Arg Cys Gln Ser Pro Tyr Phe Leu Lys Glu Ile Pro Ile Gln Asp Val  
 675 680 685  
 Ala Val Gln Asp Phe Ala Cys Glu Glu Gly Asn Asp Glu Asn Ser Cys  
 690 695 700  
 Ser Pro Leu Ala Arg Cys Pro Ala Glu Cys Ser Cys Leu Asp Thr Val  
 705 710 715 720  
 Val Arg Cys Ser Asn Lys Gly Leu Lys Val Leu Pro Lys Gly Ile Pro  
 725 730 735



Arg	Asp	Val	Thr	Glu	Leu	Tyr	Leu	Asp	Gly	Asn	Glu	Phe	Thr	Gln	Val	740	745	750
Pro	Leu	Glu	Leu	Ser	Asn	Tyr	Lys	His	Leu	Thr	Leu	Ile	Asp	Leu	Ser	755	760	765
Asn	Asn	Gln	Ile	Ser	Thr	Leu	Ser	Asn	His	Ser	Phe	Ser	Asn	Met	Ser	770	775	780
Glu	Leu	Leu	Thr	Leu	Ile	Leu	Ser	Tyr	Asn	Arg	Leu	Arg	Cys	Ile	Pro	785	790	795
Ala	Lys	Ala	Phe	Asp	Gly	Leu	Lys	Ser	Leu	Arg	Leu	Leu	Ser	Leu	His	805	810	815
Gly	Asn	Asp	Ile	Ala	Val	Ile	Pro	Asp	Gly	Ala	Phe	Lys	Asp	Leu	Ser	820	825	830
Ser	Leu	Ser	His	Leu	Ala	Leu	Gly	Ala	Asn	Pro	Leu	Tyr	Cys	Asp	Cys	835	840	845
His	Met	Gln	Trp	Leu	Ser	Asp	Trp	Val	Lys	Ser	Gly	Tyr	Lys	Glu	Pro	850	855	860
Gly	Ile	Ala	Arg	Cys	Thr	Gly	Pro	Gly	Asp	Met	Thr	Asp	Lys	Leu	Leu	865	870	875
Leu	Thr	Thr	Pro	Ser	Lys	Lys	Phe	Thr	Cys	Thr	Gly	Pro	Val	Asp	Val	885	890	895
Ser	Ile	Leu	Ala	Lys	Cys	Asn	Pro	Cys	Leu	Ser	Asn	Pro	Cys	Lys	Asn	900	905	910
Asp	Gly	Thr	Cys	Ser	Asn	His	Pro	Val	Asp	Phe	Tyr	Arg	Cys	Thr	Cys	915	920	925
Pro	Tyr	Gly	Phe	Lys	Gly	Gln	Asp	Cys	Glu	Glu	Pro	Ile	His	Ala	Cys	930	935	940
Ile	Ser	Asn	Pro	Cys	Gln	Asn	Gly	Gly	Thr	Cys	His	Leu	Lys	Asp	Gly	945	950	955
Glu	Glu	Asn	Thr	His	Trp	Cys	Val	Cys	Pro	Glu	Gly	Phe	Glu	Gly	Asp	965	970	975
Glu	Cys	Glu	Ile	Asn	Ile	Asp	Asp	Cys	Glu	Asp	Asn	Asp	Cys	Glu	Asn	980	985	990
Asn	Ser	Thr	Cys	Val	Asp	Gly	Ile	Asn	Asn	Tyr	Thr	Cys	Leu	Cys	Ser	995	1000	1005
Pro	Glu	Tyr	Thr	Gly	Glu	Leu	Cys	Glu	Asp	Lys	Leu	Asp	Phe	Cys	Ala	1010	1015	1020
Ser	Glu	Leu	Asn	Leu	Cys	Gln	His	Asp	Ser	Lys	Cys	Ile	Leu	Thr	Ala	1025	1030	1035
																		1040

Lys Gly Phe Met Cys Glu Cys Thr Pro Gly Tyr Thr Gly Glu His Cys  
 1045 1050 1055  
 Glu Val Asp Phe Asp Asp Cys Glu Asp Asn Lys Cys Lys Asn Gly Ala  
 1060 1065 1070  
 Gln Cys Ile Asp Ala Val Asn Gly Tyr Thr Cys Val Cys Pro Glu Gly  
 1075 1080 1085  
 Tyr Ser Gly Leu Phe Cys Glu Phe Ser Pro Pro Met Val Leu Pro Arg  
 1090 1095 1100  
 Thr Ser Pro Cys Asp His Tyr Asp Cys Ala Asn Gly Ala Gln Cys Val  
 1105 1110 1115 1120  
 Val Lys Asp Thr Asp Pro Val Cys Gln Cys Leu Pro Gly Tyr Glu Gly  
 1125 1130 1135  
 Val His Cys Glu Arg Leu Val Ser Val Asn Phe Ile Asn Arg Glu Ser  
 1140 1145 1150  
 Phe Leu Gln Ile Pro Ser Asn Leu Ile Thr Glu Gln Ala Asn Ile Ser  
 1155 1160 1165  
 Leu Gln Ile Ala Thr Asp Glu Asp Asn Gly Val Leu Leu Tyr Lys Gly  
 1170 1175 1180  
 Asp Asn Glu His Ile Ala Val Glu Leu Tyr Arg Gly Arg Leu Arg Val  
 1185 1190 1195 1200  
 Ser Tyr Asp Ser Gly Ser Tyr Pro Pro Ser Ala Ile Tyr Ser Val Glu  
 1205 1210 1215  
 Thr Ile Asn Asp Gly Ser Phe His Val Val Glu Leu Val Ala Lys Asp  
 1220 1225 1230  
 Gln Ser Leu Ser Leu Ser Ile Asp Gly Gly Ser Pro Lys Ser Ile Asn  
 1235 1240 1245  
 Thr Ala Asn Ser Pro Ser Pro Val Pro Ser Pro Ala Pro Leu Tyr Leu  
 1250 1255 1260  
 Gly Gly Leu Pro Gln Gln Ser Gly Leu Ala Ser Leu Arg Gln Gly Ser  
 1265 1270 1275 1280  
 Gly Arg Asn Gly Ser Ser Phe His Gly Cys Ile Arg Asn Leu Tyr Ile  
 1285 1290 1295  
 Asn Asp Gln Leu Gln Asp Leu Thr Gln Phe Leu Leu Gln Glu Gly Val  
 1300 1305 1310  
 Val Pro Gly Cys Gln Pro Cys Gln Arg Ser Met Cys Ala His Gly Gln  
 1315 1320 1325  
 Cys His Ala Thr Gly Gln Ser Ser Phe Ser Cys Glu Cys Glu Ala Gly  
 1330 1335 1340

Trp Thr Gly Pro Leu Cys Asp Gln Gln Val Asn Asn Pro Cys Asp Gly  
 1345 1350 1355 1360

Asn Lys Cys Ile His Gly Ser Cys Met Ala Ile Asn Ser Tyr Ser Tyr  
 1365 1370 1375

Ser Cys Arg Cys Leu Pro Gly Phe Ala Gly Val Leu Cys Asp Glu Glu  
 1380 1385 1390

Glu Gln Leu Ser Pro Cys Gln Tyr Ile Ala Cys Lys Tyr Gly Arg Cys  
 1395 1400 1405

Arg Val Ser Gly Leu Gly Lys Ala Tyr Cys Glu Cys Asn Ser Gly Tyr  
 1410 1415 1420

Thr Gly Gln Ser Cys Asp Arg Glu Met Ala Cys Arg Gly Glu Arg Val  
 1425 1430 1435 1440

Arg Asp His Tyr Gln Thr Gln Gln Gly Tyr Ala Ala Cys Gln Ser Thr  
 1445 1450 1455

Glu Lys Val Ser Arg Leu Glu Cys Arg Gly Ser Cys Gly Asp Gly Thr  
 1460 1465 1470

Ser Cys Cys Ala Pro Leu Arg Ser Lys Arg Arg Lys Tyr Thr Phe Gln  
 1475 1480 1485

Cys Thr Asp Gly Ser Ser Phe Val Gln Glu Val Glu Lys Val Val Lys  
 1490 1495 1500

Cys Gly Cys Thr Lys Cys Pro Ser  
 1505 1510

<210> 33

<211> 727

<212> PRT

<213> Mus musculus

<400> 33

Met Trp Trp Arg Asn Ala Pro Ala Thr Glu Glu Asn Gly Pro Phe Leu  
 1 5 10 15

Arg Lys Cys Phe Ala Ile Ser Leu Leu Val Ile Cys Ile Ile Ile Ser  
 20 25 30

Ile Gly Ile Phe Tyr Gly Phe Val Ala Asn His Gln Val Arg Thr Arg  
 35 40 45

Ile Lys Arg Ser Arg Lys Leu Ala Asp Ser Asn Phe Lys Asp Leu Arg  
 50 55 60

Thr Leu Leu Asn Glu Thr Pro Glu Gln Ile Lys Tyr Ile Leu Ala Gln  
 65 70 75 80

Tyr Asn Thr Thr Lys Asp Lys Ala Phe Thr Asp Leu Asn Ser Ile Asn

85					90					95					
Ser	Val	Leu	Gly	Gly	Gly	Ile	Leu	Asp	Arg	Leu	Arg	Pro	Asn	Ile	Ile
			100					105					110		
Pro	Val	Leu	Asp	Glu	Ile	Lys	Ser	Met	Ala	Thr	Ala	Ile	Lys	Glu	Thr
		115					120					125			
Lys	Glu	Ala	Leu	Glu	Asn	Met	Asn	Ser	Thr	Leu	Lys	Ser	Leu	His	Gln
	130					135					140				
Gln	Ser	Thr	Gln	Leu	Ser	Ser	Ser	Leu	Thr	Ser	Val	Lys	Thr	Ser	Leu
145					150					155					160
Arg	Ser	Ser	Leu	Asn	Asp	Pro	Leu	Cys	Leu	Val	His	Pro	Ser	Ser	Glu
				165					170					175	
Thr	Cys	Asn	Ser	Ile	Arg	Leu	Ser	Leu	Ser	Gln	Leu	Asn	Ser	Asn	Pro
			180					185					190		
Glu	Leu	Arg	Gln	Leu	Pro	Pro	Val	Asp	Ala	Glu	Leu	Asp	Asn	Val	Asn
		195					200					205			
Asn	Val	Leu	Arg	Thr	Asp	Leu	Asp	Gly	Leu	Val	Gln	Gln	Gly	Tyr	Gln
	210					215					220				
Ser	Leu	Asn	Asp	Ile	Pro	Asp	Arg	Val	Gln	Arg	Gln	Thr	Thr	Thr	Val
225					230					235					240
Val	Ala	Gly	Ile	Lys	Arg	Val	Leu	Asn	Ser	Ile	Gly	Ser	Asp	Ile	Asp
				245					250					255	
Asn	Val	Thr	Gln	Arg	Leu	Pro	Ile	Gln	Asp	Ile	Leu	Ser	Ala	Phe	Ser
			260					265					270		
Val	Tyr	Val	Asn	Asn	Thr	Glu	Ser	Tyr	Ile	His	Arg	Asn	Leu	Pro	Thr
		275					280					285			
Leu	Glu	Glu	Tyr	Asp	Ser	Tyr	Trp	Trp	Leu	Gly	Gly	Leu	Val	Ile	Cys
	290					295					300				
Ser	Leu	Leu	Thr	Leu	Ile	Val	Ile	Phe	Tyr	Tyr	Leu	Gly	Leu	Leu	Cys
305					310					315					320
Gly	Val	Cys	Gly	Tyr	Asp	Arg	His	Ala	Thr	Pro	Thr	Thr	Arg	Gly	Cys
				325					330					335	
Val	Ser	Asn	Thr	Gly	Gly	Val	Phe	Leu	Met	Val	Gly	Val	Gly	Leu	Ser
			340					345					350		
Phe	Leu	Phe	Cys	Trp	Ile	Leu	Met	Ile	Ile	Val	Val	Leu	Thr	Phe	Val
		355					360					365			
Phe	Gly	Ala	Asn	Val	Glu	Lys	Leu	Ile	Cys	Glu	Pro	Tyr	Thr	Ser	Lys
	370					375					380				
Glu	Leu	Phe	Arg	Val	Leu	Asp	Thr	Pro	Tyr	Leu	Leu	Asn	Glu	Asp	Trp

385		390		395		400
Glu Tyr Tyr Leu Ser Gly Lys Leu Phe Asn Lys Ser Lys Met Lys Leu						
	405			410		415
Thr Phe Glu Gln Val Tyr Ser Asp Cys Lys Lys Asn Arg Gly Thr Tyr						
	420		425		430	
Gly Thr Leu His Leu Gln Asn Ser Phe Asn Ile Ser Glu His Leu Asn						
	435		440		445	
Ile Asn Glu His Thr Gly Ser Ile Ser Ser Glu Leu Glu Ser Leu Lys						
	450		455		460	
Val Asn Leu Asn Ile Phe Leu Leu Gly Ala Ala Gly Arg Lys Asn Leu						
465		470		475		480
Gln Asp Phe Ala Ala Cys Gly Ile Asp Arg Met Asn Tyr Asp Ser Tyr						
	485		490		495	
Leu Ala Gln Thr Gly Lys Ser Pro Ala Gly Val Asn Leu Leu Ser Phe						
	500		505		510	
Ala Tyr Asp Leu Glu Ala Lys Ala Asn Ser Leu Pro Pro Gly Asn Leu						
	515		520		525	
Arg Asn Ser Leu Lys Arg Asp Ala Gln Thr Ile Lys Thr Ile His Gln						
	530		535		540	
Gln Arg Val Leu Pro Ile Glu Gln Ser Leu Ser Thr Leu Tyr Gln Ser						
545		550		555		560
Val Lys Ile Leu Gln Arg Thr Gly Asn Gly Leu Leu Glu Arg Val Thr						
	565		570		575	
Arg Ile Leu Ala Ser Leu Asp Phe Ala Gln Asn Phe Ile Thr Asn Asn						
	580		585		590	
Thr Ser Ser Val Ile Ile Glu Glu Thr Lys Lys Tyr Gly Arg Thr Ile						
	595		600		605	
Ile Gly Tyr Phe Glu His Tyr Leu Gln Trp Ile Glu Phe Ser Ile Ser						
	610		615		620	
Glu Lys Val Ala Ser Cys Lys Pro Val Ala Thr Ala Leu Asp Thr Ala						
625		630		635		640
Val Asp Val Phe Leu Cys Ser Tyr Ile Ile Asp Pro Leu Asn Leu Phe						
	645		650		655	
Trp Phe Gly Ile Gly Lys Ala Thr Val Phe Leu Leu Pro Ala Leu Ile						
	660		665		670	
Phe Ala Val Lys Leu Ala Lys Tyr Tyr Arg Arg Met Asp Ser Glu Asp						
	675		680		685	
Val Tyr Asp Asp Val Glu Thr Ile Pro Met Lys Asn Met Glu Asn Gly						

690

695

700

Asn Asn Gly Tyr His Lys Asp His Val Tyr Gly Ile His Asn Pro Val  
 705 710 715 720

Met Thr Ser Pro Ser Gln His  
 725

&lt;210&gt; 34

&lt;211&gt; 856

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 34

Met Ala Leu Val Leu Gly Ser Leu Leu Leu Leu Gly Leu Cys Gly Asn  
 1 5 10 15

Ser Phe Ser Gly Gly Gln Pro Ser Ser Thr Asp Ala Pro Lys Ala Trp  
 20 25 30

Asn Tyr Glu Leu Pro Ala Thr Asn Tyr Glu Thr Gln Asp Ser His Lys  
 35 40 45

Ala Gly Pro Ile Gly Ile Leu Phe Glu Leu Val His Ile Phe Leu Tyr  
 50 55 60

Val Val Gln Pro Arg Asp Phe Pro Glu Asp Thr Leu Arg Lys Phe Leu  
 65 70 75 80

Gln Lys Ala Tyr Glu Ser Lys Ile Asp Tyr Asp Lys Ile Val Tyr Tyr  
 85 90 95

Glu Ala Gly Ile Ile Leu Cys Cys Val Leu Gly Leu Leu Phe Ile Ile  
 100 105 110

Leu Met Pro Leu Val Gly Tyr Phe Phe Cys Met Cys Arg Cys Cys Asn  
 115 120 125

Lys Cys Gly Gly Glu Met His Gln Arg Gln Lys Glu Asn Gly Pro Phe  
 130 135 140

Leu Arg Lys Cys Phe Ala Ile Ser Leu Leu Val Ile Cys Ile Ile Ile  
 145 150 155 160

Ser Ile Gly Ile Phe Tyr Gly Phe Val Ala Asn His Gln Val Arg Thr  
 165 170 175

Arg Ile Lys Arg Ser Arg Lys Leu Ala Asp Ser Asn Phe Lys Asp Leu  
 180 185 190

Arg Thr Leu Leu Asn Glu Thr Pro Glu Gln Ile Lys Tyr Ile Leu Ala  
 195 200 205

Gln Tyr Asn Thr Thr Lys Asp Lys Ala Phe Thr Asp Leu Asn Ser Ile  
 210 215 220

Asn Ser Val Leu Gly Gly Gly Ile Leu Asp Arg Leu Arg Pro Asn Ile  
 225 230 235 240  
 Ile Pro Val Leu Asp Glu Ile Lys Ser Met Ala Thr Ala Ile Lys Glu  
 245 250 255  
 Thr Lys Glu Ala Leu Glu Asn Met Asn Ser Thr Leu Lys Ser Leu His  
 260 265 270  
 Gln Gln Ser Thr Gln Leu Ser Ser Ser Leu Thr Ser Val Lys Thr Ser  
 275 280 285  
 Leu Arg Ser Ser Leu Asn Asp Pro Leu Cys Leu Val His Pro Ser Ser  
 290 295 300  
 Glu Thr Cys Asn Ser Ile Arg Leu Ser Leu Ser Gln Leu Asn Ser Asn  
 305 310 315 320  
 Pro Glu Leu Arg Gln Leu Pro Pro Val Asp Ala Glu Leu Asp Asn Val  
 325 330 335  
 Asn Asn Val Leu Arg Thr Asp Leu Asp Gly Leu Val Gln Gln Gly Tyr  
 340 345 350  
 Gln Ser Leu Asn Asp Ile Pro Asp Arg Val Gln Arg Gln Thr Thr Thr  
 355 360 365  
 Val Val Ala Gly Ile Lys Arg Val Leu Asn Ser Ile Gly Ser Asp Ile  
 370 375 380  
 Asp Asn Val Thr Gln Arg Leu Pro Ile Gln Asp Ile Leu Ser Ala Phe  
 385 390 395 400  
 Ser Val Tyr Val Asn Asn Thr Glu Ser Tyr Ile His Arg Asn Leu Pro  
 405 410 415  
 Thr Leu Glu Glu Tyr Asp Ser Tyr Trp Trp Leu Gly Gly Leu Val Ile  
 420 425 430  
 Cys Ser Leu Leu Thr Leu Ile Val Ile Phe Tyr Tyr Leu Gly Leu Leu  
 435 440 445  
 Cys Gly Val Cys Gly Tyr Asp Arg His Ala Thr Pro Thr Thr Arg Gly  
 450 455 460  
 Cys Val Ser Asn Thr Gly Gly Val Phe Leu Met Val Gly Val Gly Leu  
 465 470 475 480  
 Ser Phe Leu Phe Cys Trp Ile Leu Met Ile Ile Val Val Leu Thr Phe  
 485 490 495  
 Val Phe Gly Ala Asn Val Glu Lys Leu Ile Cys Glu Pro Tyr Thr Ser  
 500 505 510  
 Lys Glu Leu Phe Arg Val Leu Asp Thr Pro Tyr Leu Leu Asn Glu Asp  
 515 520 525

Trp Glu Tyr Tyr Leu Ser Gly Lys Leu Phe Asn Lys Ser Lys Met Lys  
 530 535 540

Leu Thr Phe Glu Gln Val Tyr Ser Asp Cys Lys Lys Asn Arg Gly Thr  
 545 550 555 560

Tyr Gly Thr Leu His Leu Gln Asn Ser Phe Asn Ile Ser Glu His Leu  
 565 570 575

Asn Ile Asn Glu His Thr Gly Ser Ile Ser Ser Glu Leu Glu Ser Leu  
 580 585 590

Lys Val Asn Leu Asn Ile Phe Leu Leu Gly Ala Ala Gly Arg Lys Asn  
 595 600 605

Leu Gln Asp Phe Ala Ala Cys Gly Ile Asp Arg Met Asn Tyr Asp Ser  
 610 615 620

Tyr Leu Ala Gln Thr Gly Lys Ser Pro Ala Gly Val Asn Leu Leu Ser  
 625 630 635 640

Phe Ala Tyr Asp Leu Glu Ala Lys Ala Asn Ser Leu Pro Pro Gly Asn  
 645 650 655

Leu Arg Asn Ser Leu Lys Arg Asp Ala Gln Thr Ile Lys Thr Ile His  
 660 665 670

Gln Gln Arg Val Leu Pro Ile Glu Gln Ser Leu Ser Thr Leu Tyr Gln  
 675 680 685

Ser Val Lys Ile Leu Gln Arg Thr Gly Asn Gly Leu Leu Glu Arg Val  
 690 695 700

Thr Arg Ile Leu Ala Ser Leu Asp Phe Ala Gln Asn Phe Ile Thr Asn  
 705 710 715 720

Asn Thr Ser Ser Val Ile Ile Glu Glu Thr Lys Lys Tyr Gly Arg Thr  
 725 730 735

Ile Ile Gly Tyr Phe Glu His Tyr Leu Gln Trp Ile Glu Phe Ser Ile  
 740 745 750

Ser Glu Lys Val Ala Ser Cys Lys Pro Val Ala Thr Ala Leu Asp Thr  
 755 760 765

Ala Val Asp Val Phe Leu Cys Ser Tyr Ile Ile Asp Pro Leu Asn Leu  
 770 775 780

Phe Trp Phe Gly Ile Gly Lys Ala Thr Val Phe Leu Leu Pro Ala Leu  
 785 790 795 800

Ile Phe Ala Val Lys Leu Ala Lys Tyr Tyr Arg Arg Met Asp Ser Glu  
 805 810 815

Asp Val Tyr Asp Asp Val Glu Thr Ile Pro Met Lys Asn Met Glu Asn  
 820 825 830



Gly Asn Asn Gly Tyr His Lys Asp His Val Tyr Gly Ile His Asn Pro  
835 840 845

Val Met Thr Ser Pro Ser Gln His  
850 855

<210> 35  
<211> 865  
<212> PRT  
<213> Homo sapiens

<400> 35  
Met Ala Leu Val Leu Gly Ser Leu Leu Leu Leu Gly Leu Cys Gly Asn  
1 5 10 15

Ser Phe Ser Gly Gly Gln Pro Ser Ser Thr Asp Ala Pro Lys Ala Trp  
20 25 30

Asn Tyr Glu Leu Pro Ala Thr Asn Tyr Glu Thr Gln Asp Ser His Lys  
35 40 45

Ala Gly Pro Ile Gly Ile Leu Phe Glu Leu Val His Ile Phe Leu Tyr  
50 55 60

Val Val Gln Pro Arg Asp Phe Pro Glu Asp Thr Leu Arg Lys Phe Leu  
65 70 75 80

Gln Lys Ala Tyr Glu Ser Lys Ile Asp Tyr Asp Lys Pro Glu Thr Val  
85 90 95

Ile Leu Gly Leu Lys Ile Val Tyr Tyr Glu Ala Gly Ile Ile Leu Cys  
100 105 110

Cys Val Leu Gly Leu Leu Phe Ile Ile Leu Met Pro Leu Val Gly Tyr  
115 120 125

Phe Phe Cys Met Cys Arg Cys Cys Asn Lys Cys Gly Gly Glu Met His  
130 135 140

Gln Arg Gln Lys Glu Asn Gly Pro Phe Leu Arg Lys Cys Phe Ala Ile  
145 150 155 160

Ser Leu Leu Val Ile Cys Ile Ile Ile Ser Ile Gly Ile Phe Tyr Gly  
165 170 175

Phe Val Ala Asn His Gln Val Arg Thr Arg Ile Lys Arg Ser Arg Lys  
180 185 190

Leu Ala Asp Ser Asn Phe Lys Asp Leu Arg Thr Leu Leu Asn Glu Thr  
195 200 205

Pro Glu Gln Ile Lys Tyr Ile Leu Ala Gln Tyr Asn Thr Thr Lys Asp  
210 215 220

Lys Ala Phe Thr Asp Leu Asn Ser Ile Asn Ser Val Leu Gly Gly Gly  
225 230 235 240

Ile	Leu	Asp	Arg	Leu	Arg	Pro	Asn	Ile	Ile	Pro	Val	Leu	Asp	Glu	Ile		
				245					250					255			
Lys	Ser	Met	Ala	Thr	Ala	Ile	Lys	Glu	Thr	Lys	Glu	Ala	Leu	Glu	Asn		
			260					265					270				
Met	Asn	Ser	Thr	Leu	Lys	Ser	Leu	His	Gln	Gln	Ser	Thr	Gln	Leu	Ser		
		275					280					285					
Ser	Ser	Leu	Thr	Ser	Val	Lys	Thr	Ser	Leu	Arg	Ser	Ser	Leu	Asn	Asp		
		290				295					300						
Pro	Leu	Cys	Leu	Val	His	Pro	Ser	Ser	Glu	Thr	Cys	Asn	Ser	Ile	Arg		
305					310					315					320		
Leu	Ser	Leu	Ser	Gln	Leu	Asn	Ser	Asn	Pro	Glu	Leu	Arg	Gln	Leu	Pro		
				325					330					335			
Pro	Val	Asp	Ala	Glu	Leu	Asp	Asn	Val	Asn	Asn	Val	Leu	Arg	Thr	Asp		
			340					345						350			
Leu	Asp	Gly	Leu	Val	Gln	Gln	Gly	Tyr	Gln	Ser	Leu	Asn	Asp	Ile	Pro		
		355					360						365				
Asp	Arg	Val	Gln	Arg	Gln	Thr	Thr	Thr	Val	Val	Ala	Gly	Ile	Lys	Arg		
		370				375					380						
Val	Leu	Asn	Ser	Ile	Gly	Ser	Asp	Ile	Asp	Asn	Val	Thr	Gln	Arg	Leu		
385					390					395					400		
Pro	Ile	Gln	Asp	Ile	Leu	Ser	Ala	Phe	Ser	Val	Tyr	Val	Asn	Asn	Thr		
				405					410					415			
Glu	Ser	Tyr	Ile	His	Arg	Asn	Leu	Pro	Thr	Leu	Glu	Glu	Tyr	Asp	Ser		
			420					425						430			
Tyr	Trp	Trp	Leu	Gly	Gly	Leu	Val	Ile	Cys	Ser	Leu	Leu	Thr	Leu	Ile		
		435					440						445				
Val	Ile	Phe	Tyr	Tyr	Leu	Gly	Leu	Leu	Cys	Gly	Val	Cys	Gly	Tyr	Asp		
		450				455					460						
Arg	His	Ala	Thr	Pro	Thr	Thr	Arg	Gly	Cys	Val	Ser	Asn	Thr	Gly	Gly		
465					470					475					480		
Val	Phe	Leu	Met	Val	Gly	Val	Gly	Leu	Ser	Phe	Leu	Phe	Cys	Trp	Ile		
				485					490					495			
Leu	Met	Ile	Ile	Val	Val	Leu	Thr	Phe	Val	Phe	Gly	Ala	Asn	Val	Glu		
			500					505					510				
Lys	Leu	Ile	Cys	Glu	Pro	Tyr	Thr	Ser	Lys	Glu	Leu	Phe	Arg	Val	Leu		
		515					520						525				
Asp	Thr	Pro	Tyr	Leu	Leu	Asn	Glu	Asp	Trp	Glu	Tyr	Tyr	Leu	Ser	Gly		
		530				535						540					

Lys Leu Phe Asn Lys Ser Lys Met Lys Leu Thr Phe Glu Gln Val Tyr  
 545 550 555 560  
 Ser Asp Cys Lys Lys Asn Arg Gly Thr Tyr Gly Thr Leu His Leu Gln  
 565 570 575  
 Asn Ser Phe Asn Ile Ser Glu His Leu Asn Ile Asn Glu His Thr Gly  
 580 585 590  
 Ser Ile Ser Ser Glu Leu Glu Ser Leu Lys Val Asn Leu Asn Ile Phe  
 595 600 605  
 Leu Leu Gly Ala Ala Gly Arg Lys Asn Leu Gln Asp Phe Ala Ala Cys  
 610 615 620  
 Gly Ile Asp Arg Met Asn Tyr Asp Ser Tyr Leu Ala Gln Thr Gly Lys  
 625 630 635 640  
 Ser Pro Ala Gly Val Asn Leu Leu Ser Phe Ala Tyr Asp Leu Glu Ala  
 645 650 655  
 Lys Ala Asn Ser Leu Pro Pro Gly Asn Leu Arg Asn Ser Leu Lys Arg  
 660 665 670  
 Asp Ala Gln Thr Ile Lys Thr Ile His Gln Gln Arg Val Leu Pro Ile  
 675 680 685  
 Glu Gln Ser Leu Ser Thr Leu Tyr Gln Ser Val Lys Ile Leu Gln Arg  
 690 695 700  
 Thr Gly Asn Gly Leu Leu Glu Arg Val Thr Arg Ile Leu Ala Ser Leu  
 705 710 715 720  
 Asp Phe Ala Gln Asn Phe Ile Thr Asn Asn Thr Ser Ser Val Ile Ile  
 725 730 735  
 Glu Glu Thr Lys Lys Tyr Gly Arg Thr Ile Ile Gly Tyr Phe Glu His  
 740 745 750  
 Tyr Leu Gln Trp Ile Glu Phe Ser Ile Ser Glu Lys Val Ala Ser Cys  
 755 760 765  
 Lys Pro Val Ala Thr Ala Leu Asp Thr Ala Val Asp Val Phe Leu Cys  
 770 775 780  
 Ser Tyr Ile Ile Asp Pro Leu Asn Leu Phe Trp Phe Gly Ile Gly Lys  
 785 790 795 800  
 Ala Thr Val Phe Leu Leu Pro Ala Leu Ile Phe Ala Val Lys Leu Ala  
 805 810 815  
 Lys Tyr Tyr Arg Arg Met Asp Ser Glu Asp Val Tyr Asp Asp Val Glu  
 820 825 830  
 Thr Ile Pro Met Lys Asn Met Glu Asn Gly Asn Asn Gly Tyr His Lys  
 835 840 845

Asp His Val Tyr Gly Ile His Asn Pro Val Met Thr Ser Pro Ser Gln  
 850 855 860

His  
 865

<210> 36  
 <211> 857  
 <212> PRT  
 <213> Rattus norvegicus

<400> 36

Met Ala Leu Val Phe Ser Val Leu Leu Leu Leu Gly Leu Cys Gly Lys  
 1 5 10 15

Met Ala Ser Gly Gly Gln Pro Ala Phe Asp Asn Thr Pro Gly Ala Leu  
 20 25 30

Asn Tyr Glu Leu Pro Thr Thr Glu Tyr Glu Thr Gln Asp Thr Phe Asn  
 35 40 45

Ala Gly Ile Ile Asp Pro Leu Tyr Gln Met Val His Ile Phe Leu Asn  
 50 55 60

Val Val Gln Pro Asn Asp Phe Pro Gln Asp Leu Val Lys Lys Leu Ile  
 65 70 75 80

Gln Lys Arg Phe Asp Ile Ser Val Asp Thr Lys Glu Val Ala Ile Tyr  
 85 90 95

Glu Ile Gly Val Leu Ile Cys Val Ile Leu Gly Leu Leu Phe Ile Phe  
 100 105 110

Leu Met Pro Leu Val Gly Phe Phe Phe Cys Met Cys Arg Cys Cys Asn  
 115 120 125

Lys Cys Gly Gly Glu Met His Gln Arg Gln Lys Gln Asn Glu Ser Cys  
 130 135 140

Arg Arg Lys Cys Leu Ala Ile Ser Leu Leu Leu Ile Cys Leu Leu Met  
 145 150 155 160

Ser Leu Gly Ile Ala Phe Gly Phe Val Ala Asn Gln Gln Thr Arg Thr  
 165 170 175

Arg Ile Gln Arg Thr Gln Lys Leu Ala Glu Ser Asn Tyr Arg Asp Leu  
 180 185 190

Arg Ala Leu Leu Thr Glu Ala Pro Lys Gln Ile Asp Tyr Ile Leu Gly  
 195 200 205

Gln Tyr Asn Thr Thr Lys Asn Lys Ala Phe Ser Asp Leu Asp Ser Ile  
 210 215 220

Asp Ser Val Leu Gly Gly Arg Ile Lys Gly Gln Leu Lys Pro Lys Val

225		230		235		240
Thr Pro Val	Leu Glu Glu Ile Lys Ala Met	Ala Thr Ala Ile Arg Gln				
	245		250		255	
Thr Lys Asp	Ala Leu Gln Asn Met Ser Ser Ser	Leu Lys Ser Leu Arg				
	260	265		270		
Asp Ala Ser	Thr Gln Leu Ser Thr Asn Leu Thr Ser	Val Arg Asn Ser				
	275	280		285		
Ile Glu Asn	Ser Leu Asn Ser Asn Asp Cys Ala Ser	Asp Pro Ala Ser				
	290	295		300		
Lys Ile Cys	Asp Ser Leu Arg Pro Gln Leu Ser Asn	Leu Gly Ser Asn				
305		310		315		320
His Asn Gly	Ser Gln Leu Pro Ser Val Asp Arg Glu	Leu Asn Thr Val				
	325		330		335	
Asn Asp Val	Asp Arg Thr Asp Leu Glu Ser Leu Val	Lys Arg Gly Tyr				
	340		345		350	
Met Ser Ile	Asp Glu Ile Pro Asn Met Ile Gln Asn	Gln Thr Gly Asp				
	355	360		365		
Val Ile Lys	Asp Val Lys Lys Thr Leu Asp Ser Val	Ser Ser Lys Val				
	370	375		380		
Lys Asn Met	Ser Gln Ser Ile Pro Val Glu Glu Val	Leu Leu Gln Phe				
385		390		395		400
Ser His Tyr	Leu Asn Asp Ser Asn Arg Tyr Ile His	Glu Ser Leu Pro				
	405		410		415	
Arg Val Glu	Glu Tyr Asp Ser Tyr Trp Trp Leu Gly	Gly Leu Ile Val				
	420		425		430	
Cys Phe Leu	Leu Thr Leu Ile Val Thr Phe Phe Tyr	Leu Gly Leu Leu				
	435	440		445		
Cys Gly Val	Phe Gly Tyr Asp Lys Arg Ala Thr Pro	Thr Arg Arg Gly				
	450	455		460		
Cys Val Ser	Asn Thr Gly Gly Ile Phe Leu Met Ala	Gly Val Gly Phe				
465		470		475		480
Ser Phe Leu	Phe Cys Trp Ile Leu Met Ile Leu Val	Val Leu Thr Phe				
	485		490		495	
Val Val Gly	Ala Asn Val Glu Lys Leu Leu Cys Glu	Pro Tyr Glu Asn				
	500		505		510	
Lys Lys Leu	Leu Gln Val Leu Asp Thr Pro Tyr Leu	Leu Asn Asp Gln				
	515	520		525		
Trp Gln Phe	Tyr Leu Ser Gly Ile Leu Leu Lys Asn	Pro Asp Ile Asn				

530	535	540
Met Thr Phe Glu Gln Val Tyr Arg Asp Cys Lys Arg Gly Arg Gly Val 545 550 555 560		
Tyr Ala Thr Phe Gln Leu Glu Asn Val Phe Asn Ile Thr Glu Asn Phe 565 570 575		
Asn Ile Glu Arg Leu Ser Glu Asp Ile Val Lys Glu Leu Glu Lys Leu 580 585 590		
Asn Val Asn Ile Asp Ser Ile Glu Leu Leu Asp Lys Thr Gly Arg Lys 595 600 605		
Ser Leu Glu Asp Phe Ala Gln Ser Gly Ile Asp Arg Ile Asn Tyr Ser 610 615 620		
Met Tyr Leu Gln Glu Ala Glu Lys Pro Pro Thr Lys Val Asp Leu Leu 625 630 635 640		
Thr Phe Ala Ser Phe Leu Glu Thr Glu Ala Asn Gln Leu Pro Asp Gly 645 650 655		
Asn Leu Lys Gln Ala Phe Leu Met Asp Ala Gln Asn Ile Arg Ala Ile 660 665 670		
His Gln Gln His Val Pro Pro Val Gln Gln Ser Leu Asn Ser Leu Lys 675 680 685		
Gln Ser Val Trp Ala Leu Lys Gln Thr Ser Ser Lys Leu Pro Glu Glu 690 695 700		
Val Lys Lys Val Leu Ala Ser Leu Asp Ser Ala Gln His Phe Leu Thr 705 710 715 720		
Ser Asn Leu Ser Ser Ile Val Ile Gly Glu Thr Lys Lys Phe Gly Arg 725 730 735		
Thr Ile Ile Gly Tyr Phe Glu His Tyr Leu Gln Trp Val Leu Tyr Ala 740 745 750		
Ile Thr Glu Lys Met Thr Ser Cys Lys Pro Met Ile Thr Ala Met Asp 755 760 765		
Ser Ala Val Asn Gly Ile Leu Cys Ser Tyr Val Ala Asp Pro Leu Asn 770 775 780		
Leu Phe Trp Phe Gly Ile Gly Lys Ala Thr Met Leu Leu Leu Pro Ala 785 790 795 800		
Val Ile Ile Ala Ile Lys Leu Ala Lys Tyr Tyr Arg Arg Met Asp Ser 805 810 815		
Glu Asp Val Tyr Asp Asp Val Glu Thr Val Pro Met Lys Asn Leu Glu 820 825 830		
Asn Gly Ser Asn Gly Tyr His Lys Asp His Leu Tyr Gly Val His Asn		

835

840

845

Pro Val Met Thr Ser Pro Ser Arg Tyr  
850 855

&lt;210&gt; 37

&lt;211&gt; 867

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 37

Met Ala Leu Val Phe Ser Ala Leu Leu Leu Leu Gly Leu Cys Gly Lys  
1 5 10 15

Ile Ser Ser Glu Gly Gln Pro Ala Phe His Asn Thr Pro Gly Ala Met  
20 25 30

Asn Tyr Glu Leu Pro Thr Thr Lys Tyr Glu Thr Gln Asp Thr Phe Asn  
35 40 45

Ala Gly Ile Val Gly Pro Leu Tyr Lys Met Val His Ile Phe Leu Ser  
50 55 60

Val Val Gln Pro Asn Asp Phe Pro Leu Asp Leu Ile Lys Lys Leu Ile  
65 70 75 80

Gln Asn Lys Lys Phe Asp Ile Ser Val Asp Ser Lys Glu Pro Glu Ile  
85 90 95

Ile Val Leu Ala Leu Lys Ile Ala Leu Tyr Glu Ile Gly Val Leu Ile  
100 105 110

Cys Ala Ile Leu Gly Leu Leu Phe Ile Ile Leu Met Pro Leu Val Gly  
115 120 125

Cys Phe Phe Cys Met Cys Arg Cys Cys Asn Lys Cys Gly Gly Glu Met  
130 135 140

His Gln Arg Gln Lys Gln Asn Ala Pro Cys Arg Arg Lys Cys Leu Gly  
145 150 155 160

Leu Ser Leu Leu Val Ile Cys Leu Leu Met Ser Leu Gly Ile Ile Tyr  
165 170 175

Gly Phe Val Ala Asn Gln Gln Thr Arg Thr Arg Ile Lys Gly Thr Gln  
180 185 190

Lys Leu Ala Lys Ser Asn Phe Arg Asp Phe Gln Thr Leu Leu Thr Glu  
195 200 205

Thr Pro Lys Gln Ile Asp Tyr Val Val Glu Gln Tyr Thr Asn Thr Lys  
210 215 220

Asn Lys Ala Phe Ser Asp Leu Asp Gly Ile Gly Ser Val Leu Gly Gly  
225 230 235 240

Arg Ile Lys Asp Gln Leu Lys Pro Lys Val Thr Pro Val Leu Glu Glu  
 245 250 255  
 Ile Lys Ala Met Ala Thr Ala Ile Lys Gln Thr Lys Asp Ala Leu Gln  
 260 265 270  
 Asn Met Ser Ser Ser Leu Lys Ser Leu Gln Asp Ala Ala Thr Gln Leu  
 275 280 285  
 Asn Thr Asn Leu Ser Ser Val Arg Asn Ser Ile Glu Asn Ser Leu Ser  
 290 295 300  
 Ser Ser Asp Cys Thr Ser Asp Pro Ala Ser Lys Ile Cys Asp Ser Ile  
 305 310 315 320  
 Arg Pro Ser Leu Ser Ser Leu Gly Ser Ser Leu Asn Ser Ser Gln Leu  
 325 330 335  
 Pro Ser Val Asp Arg Glu Leu Asn Thr Val Thr Glu Val Asp Lys Thr  
 340 345 350  
 Asp Leu Glu Ser Leu Val Lys Arg Gly Tyr Thr Thr Ile Asp Glu Ile  
 355 360 365  
 Pro Asn Thr Ile Gln Asn Gln Thr Val Asp Val Ile Lys Asp Val Lys  
 370 375 380  
 Asn Thr Leu Asp Ser Ile Ser Ser Asn Ile Lys Asp Met Ser Gln Ser  
 385 390 395 400  
 Ile Pro Ile Glu Asp Met Leu Leu Gln Val Ser His Tyr Leu Asn Asn  
 405 410 415  
 Ser Asn Arg Tyr Leu Asn Gln Glu Leu Pro Lys Leu Glu Glu Tyr Asp  
 420 425 430  
 Ser Tyr Trp Trp Leu Gly Gly Leu Ile Val Cys Phe Leu Leu Thr Leu  
 435 440 445  
 Ile Val Thr Phe Phe Phe Leu Gly Leu Leu Cys Gly Val Phe Gly Tyr  
 450 455 460  
 Asp Lys His Ala Thr Pro Thr Arg Arg Gly Cys Val Ser Asn Thr Gly  
 465 470 475 480  
 Gly Ile Phe Leu Met Ala Gly Val Gly Phe Gly Phe Leu Phe Cys Trp  
 485 490 495  
 Ile Leu Met Ile Leu Val Val Leu Thr Phe Val Val Gly Ala Asn Val  
 500 505 510  
 Glu Lys Leu Leu Cys Glu Pro Tyr Glu Asn Lys Lys Leu Leu Gln Val  
 515 520 525  
 Leu Asp Thr Pro Tyr Leu Leu Lys Glu Gln Trp Gln Phe Tyr Leu Ser  
 530 535 540



Gly Met Leu Phe Asn Asn Pro Asp Ile Asn Met Thr Phe Glu Gln Val  
 545 550 555 560  
 Tyr Arg Asp Cys Lys Arg Gly Arg Gly Ile Tyr Ala Ala Phe Gln Leu  
 565 570 575  
 Glu Asn Val Val Asn Val Ser Asp His Phe Asn Ile Asp Gln Ile Ser  
 580 585 590  
 Glu Asn Ile Asn Thr Glu Leu Glu Asn Leu Asn Val Asn Ile Asp Ser  
 595 600 605  
 Ile Glu Leu Leu Asp Asn Thr Gly Arg Lys Ser Leu Glu Asp Phe Ala  
 610 615 620  
 His Ser Gly Ile Asp Thr Ile Asp Tyr Ser Thr Tyr Leu Lys Glu Thr  
 625 630 635 640  
 Glu Lys Ser Pro Thr Glu Val Asn Leu Leu Thr Phe Ala Ser Thr Leu  
 645 650 655  
 Glu Ala Lys Ala Asn Gln Leu Pro Glu Gly Lys Pro Lys Gln Ala Phe  
 660 665 670  
 Leu Leu Asp Val Gln Asn Ile Arg Ala Ile His Gln His Leu Leu Pro  
 675 680 685  
 Pro Val Gln Gln Ser Leu Asn Thr Leu Arg Gln Ser Val Trp Thr Leu  
 690 695 700  
 Gln Gln Thr Ser Asn Lys Leu Pro Glu Lys Val Lys Lys Ile Leu Ala  
 705 710 715 720  
 Ser Leu Asp Ser Val Gln His Phe Leu Thr Asn Asn Val Ser Leu Ile  
 725 730 735  
 Val Ile Gly Glu Thr Lys Lys Phe Gly Lys Thr Ile Leu Gly Tyr Phe  
 740 745 750  
 Glu His Tyr Leu His Trp Val Phe Tyr Ala Ile Thr Glu Lys Met Thr  
 755 760 765  
 Ser Cys Lys Pro Met Ala Thr Ala Met Asp Ser Ala Val Asn Gly Ile  
 770 775 780  
 Leu Cys Gly Tyr Val Ala Asp Pro Leu Asn Leu Phe Trp Phe Gly Ile  
 785 790 795 800  
 Gly Lys Ala Thr Val Leu Leu Leu Pro Ala Val Ile Ile Ala Ile Lys  
 805 810 815  
 Leu Ala Lys Tyr Tyr Arg Arg Met Asp Ser Glu Asp Val Tyr Asp Asp  
 820 825 830  
 Val Glu Thr Val Pro Met Lys Asn Leu Glu Ile Gly Ser Asn Gly Tyr  
 835 840 845

His Lys Asp His Leu Tyr Gly Val His Asn Pro Val Met Thr Ser Pro  
 850 855 860

Ser Arg Tyr  
 865

<210> 38  
 <211> 331  
 <212> PRT  
 <213> Homo sapiens

<400> 38

Met Glu Asn Pro Ser Pro Ala Ala Ala Leu Gly Lys Ala Leu Cys Ala  
 1 5 10 15

Leu Leu Leu Ala Thr Leu Gly Ala Ala Gly Gln Pro Leu Gly Gly Glu  
 20 25 30

Ser Ile Cys Ser Ala Arg Ala Pro Ala Lys Tyr Ser Ile Thr Phe Thr  
 35 40 45

Gly Lys Trp Ser Gln Thr Ala Phe Pro Lys Gln Tyr Pro Leu Phe Arg  
 50 55 60

Pro Pro Ala Gln Trp Ser Ser Leu Leu Gly Ala Ala His Ser Ser Asp  
 65 70 75 80

Tyr Ser Met Trp Arg Lys Asn Gln Tyr Val Ser Asn Gly Leu Arg Asp  
 85 90 95

Phe Ala Glu Arg Gly Glu Ala Trp Ala Leu Met Lys Glu Ile Glu Ala  
 100 105 110

Ala Gly Glu Ala Leu Gln Ser Val His Ala Val Phe Ser Ala Pro Ala  
 115 120 125

Val Pro Ser Gly Thr Gly Gln Thr Ser Ala Glu Leu Glu Val Gln Arg  
 130 135 140

Arg His Ser Leu Val Ser Phe Val Val Arg Ile Val Pro Ser Pro Asp  
 145 150 155 160

Trp Phe Val Gly Val Asp Ser Leu Asp Leu Cys Asp Gly Asp Arg Trp  
 165 170 175

Arg Glu Gln Ala Ala Leu Asp Leu Tyr Pro Tyr Asp Ala Gly Thr Asp  
 180 185 190

Ser Gly Phe Thr Phe Ser Ser Pro Asn Phe Ala Thr Ile Pro Gln Asp  
 195 200 205

Thr Val Thr Glu Ile Thr Ser Ser Ser Pro Ser His Pro Ala Asn Ser  
 210 215 220

Phe Tyr Tyr Pro Arg Leu Lys Ala Leu Pro Pro Ile Ala Arg Val Thr  
 225 230 235 240

Leu Val Arg Leu Arg Gln Ser Pro Arg Ala Phe Ile Pro Pro Ala Pro  
 245 250 255  
 Val Leu Pro Ser Arg Asp Asn Glu Ile Val Asp Ser Ala Ser Val Pro  
 260 265 270  
 Glu Thr Pro Leu Asp Cys Glu Val Ser Leu Trp Ser Ser Trp Gly Leu  
 275 280 285  
 Cys Gly Gly His Cys Gly Arg Leu Gly Thr Lys Ser Arg Thr Arg Tyr  
 290 295 300  
 Val Arg Val Gln Pro Ala Asn Asn Gly Ser Pro Cys Pro Glu Leu Glu  
 305 310 315 320  
 Glu Glu Ala Glu Cys Val Pro Asp Asn Cys Val  
 325 330

<210> 39  
 <211> 331  
 <212> PRT  
 <213> Homo sapiens

<400> 39  
 Met Glu Asn Pro Ser Pro Ala Ala Ala Leu Gly Lys Ala Leu Cys Ala  
 1 5 10 15  
 Leu Leu Leu Ala Thr Leu Gly Ala Ala Gly Gln Pro Leu Gly Gly Glu  
 20 25 30  
 Ser Ile Cys Ser Ala Arg Ala Leu Ala Lys Tyr Ser Ile Thr Phe Thr  
 35 40 45  
 Gly Lys Trp Ser Gln Thr Ala Phe Pro Lys Gln Tyr Pro Leu Phe Arg  
 50 55 60  
 Pro Pro Ala Gln Trp Ser Ser Leu Leu Gly Ala Ala His Ser Ser Asp  
 65 70 75 80  
 Tyr Ser Met Trp Arg Lys Asn Gln Tyr Val Ser Asn Gly Leu Arg Asp  
 85 90 95  
 Phe Ala Glu Arg Gly Glu Ala Trp Ala Leu Met Lys Glu Ile Glu Ala  
 100 105 110  
 Ala Gly Glu Ala Leu Gln Ser Val His Ala Val Phe Ser Ala Pro Ala  
 115 120 125  
 Val Pro Ser Gly Thr Gly Gln Thr Ser Ala Glu Leu Glu Val Gln Arg  
 130 135 140  
 Arg His Ser Leu Val Ser Phe Val Val Arg Ile Val Pro Ser Pro Asp  
 145 150 155 160  
 Trp Phe Val Gly Val Asp Ser Leu Asp Leu Cys Asp Gly Asp Arg Trp

165										170					175						
Arg	Glu	Gln	Ala	Ala	Leu	Asp	Leu	Tyr	Pro	Tyr	Asp	Ala	Gly	Thr	Asp						
			180					185					190								
Ser	Gly	Phe	Thr	Phe	Ser	Ser	Pro	Asn	Phe	Ala	Thr	Ile	Pro	Gln	Asp						
		195					200					205									
Thr	Val	Thr	Glu	Ile	Thr	Ser	Ser	Ser	Pro	Ser	His	Pro	Ala	Asn	Ser						
	210					215					220										
Phe	Tyr	Tyr	Pro	Arg	Leu	Lys	Ala	Leu	Pro	Pro	Ile	Ala	Arg	Val	Thr						
225					230				235						240						
Leu	Val	Arg	Leu	Arg	Gln	Ser	Pro	Arg	Ala	Phe	Ile	Pro	Pro	Ala	Pro						
				245					250					255							
Val	Leu	Pro	Ser	Arg	Asp	Asn	Glu	Ile	Val	Asp	Ser	Ala	Ser	Val	Pro						
			260				265						270								
Glu	Thr	Pro	Leu	Asp	Cys	Glu	Val	Ser	Leu	Trp	Ser	Ser	Trp	Gly	Leu						
	275						280					285									
Cys	Gly	Gly	His	Cys	Gly	Arg	Leu	Gly	Thr	Lys	Ser	Arg	Thr	Arg	Tyr						
	290					295					300										
Val	Arg	Val	Gln	Pro	Ala	Asn	Asn	Gly	Ser	Pro	Cys	Pro	Glu	Leu	Glu						
305					310					315					320						
Glu	Glu	Ala	Glu	Cys	Val	Pro	Asp	Asn	Cys	Val											
				325					330												

<210> 40  
 <211> 331  
 <212> PRT  
 <213> Homo sapiens

<400> 40																				
Met	Glu	Asn	Pro	Ser	Pro	Ala	Ala	Ala	Leu	Gly	Lys	Ala	Leu	Cys	Ala					
1				5					10					15						
Leu	Leu	Leu	Ala	Thr	Leu	Gly	Ala	Ala	Gly	Gln	Pro	Leu	Gly	Gly	Glu					
			20					25					30							
Ser	Ile	Cys	Ser	Ala	Arg	Ala	Pro	Ala	Lys	Tyr	Ser	Ile	Thr	Phe	Thr					
		35					40					45								
Gly	Lys	Trp	Ser	Gln	Thr	Ala	Phe	Pro	Lys	Gln	Tyr	Pro	Leu	Phe	Arg					
	50					55					60									
Pro	Pro	Ala	Gln	Trp	Ser	Ser	Leu	Leu	Gly	Ala	Ala	His	Ser	Ser	Asp					
65					70					75					80					
Tyr	Ser	Met	Trp	Arg	Lys	Asn	Gln	Tyr	Val	Ser	Asn	Gly	Leu	Arg	Asp					
				85					90						95					

Phe Ala Glu Arg Gly Glu Ala Trp Ala Leu Met Lys Glu Ile Glu Ala  
 100 105 110  
 Ala Gly Glu Ala Leu Gln Ser Val His Glu Val Phe Ser Ala Pro Ala  
 115 120 125  
 Val Pro Ser Gly Thr Gly Gln Thr Ser Ala Glu Leu Glu Val Gln Arg  
 130 135 140  
 Arg His Ser Leu Val Ser Phe Val Val Arg Ile Val Pro Ser Pro Asp  
 145 150 155 160  
 Trp Phe Val Gly Val Asp Ser Leu Asp Leu Cys Asp Gly Asp Arg Trp  
 165 170 175  
 Arg Glu Gln Ala Ala Leu Asp Leu Tyr Pro Tyr Asp Ala Gly Thr Asp  
 180 185 190  
 Ser Gly Phe Thr Phe Ser Ser Pro Asn Phe Ala Thr Ile Pro Gln Asp  
 195 200 205  
 Thr Val Thr Glu Ile Thr Ser Ser Ser Pro Ser His Pro Ala Asn Ser  
 210 215 220  
 Phe Tyr Tyr Pro Arg Leu Lys Ala Leu Pro Pro Ile Ala Arg Val Thr  
 225 230 235 240  
 Leu Leu Arg Leu Arg Gln Ser Pro Arg Ala Phe Ile Pro Pro Ala Pro  
 245 250 255  
 Val Leu Pro Ser Arg Asp Asn Glu Ile Val Asp Ser Ala Ser Val Pro  
 260 265 270  
 Glu Thr Pro Leu Asp Cys Glu Val Ser Leu Trp Ser Ser Trp Gly Leu  
 275 280 285  
 Cys Gly Gly His Cys Gly Arg Leu Gly Thr Lys Ser Arg Thr Arg Tyr  
 290 295 300  
 Val Arg Val Gln Pro Ala Asn Asn Gly Ser Pro Cys Pro Glu Leu Glu  
 305 310 315 320  
 Glu Glu Ala Glu Cys Val Pro Asp Asn Cys Val  
 325 330

<210> 41  
 <211> 330  
 <212> PRT  
 <213> Rattus norvegicus

<400> 41  
 Met Glu Asn Val Ser Phe Ser Leu Asp Arg Thr Leu Trp Val Phe Leu  
 1 5 10 15  
 Leu Ala Met Leu Gly Ser Thr Ala Gly Gln Pro Leu Gly Gly Glu Ser  
 20 25 30

Val Cys Thr Ala Arg Pro Leu Ala Arg Tyr Ser Ile Thr Phe Thr Gly  
35 40 45  
Lys Trp Ser Gln Thr Ala Phe Pro Lys Gln Tyr Pro Leu Phe Arg Pro  
50 55 60  
Pro Ala Gln Trp Ser Ser Leu Leu Gly Ala Ala His Ser Ser Asp Tyr  
65 70 75 80  
Ser Met Trp Arg Lys Asn Glu Tyr Val Ser Asn Gly Leu Arg Asp Phe  
85 90 95  
Ala Glu Arg Gly Glu Ala Trp Ala Leu Met Lys Glu Ile Glu Ala Ala  
100 105 110  
Gly Glu Lys Leu Gln Ser Val His Ala Val Phe Ser Ala Pro Ala Val  
115 120 125  
Pro Ser Gly Thr Gly Gln Thr Ser Ala Glu Leu Glu Val His Pro Arg  
130 135 140  
His Ser Leu Val Ser Phe Val Val Arg Ile Val Pro Ser Pro Asp Trp  
145 150 155 160  
Phe Val Gly Ile Asp Ser Leu Asp Leu Cys Glu Gly Gly Arg Trp Lys  
165 170 175  
Glu Gln Val Val Leu Asp Leu Tyr Pro His Asp Ala Gly Thr Asp Ser  
180 185 190  
Gly Phe Thr Phe Ser Ser Pro Asn Phe Ala Thr Ile Pro Gln Asp Thr  
195 200 205  
Val Thr Glu Ile Thr Ala Ser Ser Pro Ser His Pro Ala Asn Ser Phe  
210 215 220  
Tyr Tyr Pro Arg Leu Lys Ser Leu Pro Pro Ile Ala Lys Val Thr Phe  
225 230 235 240  
Val Arg Leu Arg Gln Ser Pro Arg Ala Phe Ala Pro Pro Ser Leu Asp  
245 250 255  
Leu Ala Ser Arg Gly Asn Glu Ile Val Asp Ser Leu Ser Val Pro Glu  
260 265 270  
Thr Pro Leu Asp Cys Glu Val Ser Leu Trp Ser Ser Trp Gly Leu Cys  
275 280 285  
Gly Gly Pro Cys Gly Lys Leu Gly Ala Lys Ser Arg Thr Arg Tyr Val  
290 295 300  
Arg Val Gln Pro Ala Asn Asn Gly Thr Pro Cys Pro Glu Leu Glu Glu  
305 310 315 320  
Glu Ala Glu Cys Ala Pro Asp Asn Cys Val  
325 330

<210> 42  
 <211> 331  
 <212> PRT  
 <213> Danio rerio

<400> 42

Met	Glu	Thr	Met	Thr	Ser	Leu	Arg	Val	Asn	Cys	Trp	Leu	Thr	Met	Thr
1				5					10					15	
Leu	Ala	Leu	Leu	Ser	Gly	Val	Pro	Ala	Met	Pro	Val	Asp	Val	Asp	Arg
			20					25					30		
Met	Cys	Thr	Ala	Pro	Ser	Thr	Ala	Lys	Tyr	Arg	Leu	Thr	Phe	Thr	Gly
		35					40					45			
Gln	Trp	Thr	Gln	Thr	Ala	Phe	Pro	Lys	His	Tyr	Pro	Leu	Tyr	Arg	Pro
	50					55					60				
Pro	Ala	Gln	Trp	Ser	Pro	Leu	Ile	Gly	Val	Thr	His	Ser	Ser	Asp	Tyr
65					70					75					80
His	Leu	Trp	Gln	Arg	Asn	Glu	Tyr	Ala	Ser	Asn	Gly	Val	Arg	Glu	Phe
				85					90					95	
Ser	Glu	Arg	Ala	Glu	Ala	Trp	Thr	Leu	Ile	Lys	Glu	Val	Glu	Ala	Ala
			100					105					110		
Gly	Glu	Arg	Ile	Gln	Ser	Val	Tyr	Gly	Leu	Phe	Ser	Ala	Pro	Ala	Val
		115					120					125			
Val	Ala	Gly	Thr	Gly	His	Ala	Thr	Thr	Glu	Phe	Glu	Val	Phe	Ala	Arg
	130					135					140				
His	Ser	Leu	Leu	Ser	Phe	Ile	Val	Arg	Ile	Val	Pro	Ser	Pro	Asp	Trp
145					150					155					160
Phe	Ile	Gly	Val	Asp	Ser	Leu	Asn	Leu	Cys	Glu	Gly	Asp	His	Gly	Lys
				165					170					175	
Glu	Asn	Ile	Ser	Leu	Glu	Leu	Tyr	Pro	Tyr	Asp	Ala	Gly	Thr	Asp	Ser
			180					185					190		
Gly	Phe	Thr	Phe	Ser	Ser	Pro	Asn	Phe	Glu	Thr	Ile	Pro	Gln	Asp	Lys
		195					200						205		
Val	Thr	Gln	Ile	Thr	Ser	Ser	Phe	Pro	Ser	His	Pro	Ala	Asn	Ser	Phe
	210						215					220			
Tyr	Tyr	Pro	Arg	Leu	Lys	His	Leu	Pro	Pro	Ile	Ala	Lys	Val	Ser	Leu
225					230					235					240
Thr	Lys	Ile	Lys	Asn	Asn	Gln	Ile	Phe	Ser	Leu	Pro	Ile	Gln	Pro	Thr
				245					250					255	
Gln	Ser	Asn	Gln	Ile	Pro	Ser	Gly	Asn	Glu	Ile	Asp	Gly	Pro	Leu	Ile

260	265	270
Asn Thr Pro Leu Asp Cys Glu Val Ser Val Trp Ser Pro Trp Gly Leu		
275	280	285
Cys Lys Gly Gln Cys Gly Glu Lys Gly Val Lys His Arg Thr Arg Tyr		
290	295	300
Ile His Met His Pro Ala Asn Asn Gly Ala Pro Cys Pro Ser Leu Glu		
305	310	315
Glu Lys Arg Leu Cys Ile Pro Asp Asn Cys Val		
325	330	

<210> 43  
 <211> 104  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Consensus  
 Sequence

<400> 43
Pro Ser Phe Leu Val Ser Gly Thr Phe Asp Ala Arg Gly Gly Arg Leu
1                      5                      10                      15
Arg Gly Pro Arg Thr Gly Val Arg Leu Ile Ile Pro Pro Gly Ala Ile
20                      25                      30
Pro Gln Gly Thr Arg Tyr Thr Cys Tyr Leu Val Val His Asp Lys Leu
35                      40                      45
Ser Thr Pro Pro Pro Leu Glu Glu Gly Glu Thr Leu Leu Ser Pro Val
50                      55                      60
Val Glu Cys Gly Pro His Gly Ala Leu Phe Leu Arg Pro Val Ile Leu
65                      70                      75                      80
Glu Val Pro His Cys Ala Ser Leu Arg Pro Arg Asp Trp Glu Ile Val
85                      90                      95
Leu Leu Arg Ser Glu Asn Gly Gly
100

<210> 44  
 <211> 104  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: ZU5 domain  
 Consensus Sequence

<400> 44



Ser Gly Phe Leu Val Ser Gly Thr Phe Asp Ala Arg Gly Gly Arg Leu  
 1 5 10 15  
 Arg Gly Pro Arg Thr Gly Val Arg Leu Ile Ile Pro Pro Gly Ala Ile  
 20 25 30  
 Pro Gln Gly Thr Arg Tyr Thr Cys Tyr Leu Val Val His Asp Lys Leu  
 35 40 45  
 Ser Thr Pro Pro Pro Leu Glu Gly Glu Thr Leu Leu Ser Pro Val  
 50 55 60  
 Val Glu Cys Gly Pro His Gly Ala Leu Phe Leu Arg Pro Val Ile Leu  
 65 70 75 80  
 Glu Val Pro His Cys Ala Ser Leu Arg Pro Arg Asp Trp Glu Leu Val  
 85 90 95  
 Leu Leu Arg Ser Glu Asn Gly Gly  
 100

<210> 45  
 <211> 96  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: DEATH domain  
 Consensus Sequence

<400> 45  
 Pro Pro Gly Ala Ala Ser Leu Thr Glu Leu Thr Arg Glu Lys Leu Ala  
 1 5 10 15  
 Lys Leu Leu Asp His Asp Leu Gly Asp Asp Trp Arg Glu Leu Ala Arg  
 20 25 30  
 Lys Leu Gly Leu Ser Glu Ala Asp Ile Asp Gln Ile Glu Thr Glu Ser  
 35 40 45  
 Pro Arg Asp Leu Ala Glu Gln Ser Tyr Gln Leu Leu Arg Leu Trp Glu  
 50 55 60  
 Gln Arg Glu Gly Lys Asn Ala Thr Leu Gly Thr Leu Leu Glu Ala Leu  
 65 70 75 80  
 Arg Lys Met Gly Arg Asp Asp Ala Val Glu Leu Leu Arg Ser Glu Leu  
 85 90 95

<210> 46  
 <211> 51  
 <212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: TSP1 domain  
Consensus Sequence

<400> 46

Trp Gly Glu Trp Ser Glu Trp Ser Pro Cys Ser Val Thr Cys Gly Gly  
1 5 10 15

Gly Val Gln Thr Arg Thr Arg Cys Cys Asn Pro Pro Pro Asn Gly Gly  
20 25 30

Gly Pro Cys Thr Gly Pro Asp Thr Glu Thr Arg Ala Cys Asn Glu Gln  
35 40 45

Pro Cys Pro  
50

<210> 47

<211> 83

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Death domain  
Consensus Sequence

<400> 47

Arg Glu Leu Cys Lys Leu Leu Asp Asp Pro Leu Gly Arg Asp Trp Arg  
1 5 10 15

Arg Leu Ala Arg Lys Leu Gly Leu Ser Glu Glu Glu Ile Asp Gln Ile  
20 25 30

Glu His Glu Asn Pro Arg Leu Ala Ser Pro Thr Tyr Gln Leu Leu Asp  
35 40 45

Leu Trp Glu Gln Arg Gly Gly Lys Asn Ala Thr Val Gly Thr Leu Leu  
50 55 60

Glu Ala Leu Arg Lys Met Gly Arg Asp Asp Ala Val Glu Leu Leu Glu  
65 70 75 80

Ser Ala Leu

<210> 48

<211> 86

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: IG domain  
Consensus Sequence

<400> 48

Pro Pro Ser Val Thr Val Lys Glu Gly Glu Ser Val Thr Leu Ser Cys  
1 5 10 15  
Glu Ala Ser Gly Asn Pro Pro Pro Thr Val Thr Trp Tyr Lys Gln Gly  
20 25 30  
Gly Lys Leu Leu Ala Glu Ser Gly Arg Phe Ser Val Ser Arg Ser Gly  
35 40 45  
Gly Asn Ser Thr Leu Thr Ile Ser Asn Val Thr Pro Glu Asp Ser Gly  
50 55 60  
Thr Tyr Thr Cys Ala Ala Thr Asn Ser Ser Gly Ser Ala Ser Ser Gly  
65 70 75 80  
Thr Thr Leu Thr Val Leu  
85

<210> 49

<211> 51

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: LRRCT domain  
Consensus Sequence

<400> 49

Asn Pro Phe Ile Cys Asp Cys Glu Leu Arg Trp Leu Leu Arg Trp Leu  
1 5 10 15  
Arg Glu Pro Arg Arg Leu Glu Asp Pro Glu Asp Leu Arg Cys Ala Ser  
20 25 30  
Pro Glu Ser Leu Arg Gly Pro Leu Leu Glu Leu Leu Pro Ser Asp Phe  
35 40 45  
Ser Cys Pro  
50

<210> 50

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Ag1395 Forward  
Primer

<400> 50

ctgcacttca aggacagtta cc

22

<210> 51  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Ag1395 Probe  
Primer

<400> 51  
ctatccatcc acgatgtgcc cagct 25

<210> 52  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Ag1395 Reverse  
Primer

<400> 52  
tgacaaggag cttactcttc ca 22

<210> 53  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Ag395 Forward  
Primer

<400> 53  
caggaagaaa taagccaagt cca 23

<210> 54  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Ag395 Probe  
Primer

<400> 54  
tccttggcct cccgcctgc 19

<210> 55  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Ag395 Reverse  
 Primer

<400> 55  
 gaggtcatgt tctagcttcc catt 24

<210> 56  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Ag888 Forward  
 Primer

<400> 56  
 catagctgac cgcacatcgaa 20

<210> 57  
 <211> 26  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Ag888 Probe  
 Primer

<400> 57  
 aatgctccat ctccttggct gactga 26

<210> 58  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Ag888 Reverse  
 Primer

<400> 58  
 ggagctagca tccatcatca c 21

<210> 59  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Ag784 Forward  
 Primer

<400> 59

gtcctgggat gtgtgagaga t

21

<210> 60

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Ag784 Probe  
Primer

<400> 60

cagagagacg cagctcctcc aagaag

26

<210> 61

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Ag784 Reverse  
Primer

<400> 61

gaacaacctc acagagcttc ag

22

<210> 62

<211> 104

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ZU5 domain  
Consensus Sequence

<400> 62

Pro Ser Phe Leu Val Ser Gly Thr Phe Asp Ala Arg Gly Gly Arg Leu  
1 5 10 15

Arg Gly Pro Arg Thr Gly Val Arg Leu Ile Ile Pro Pro Gly Ala Ile  
20 25 30

Pro Gln Gly Thr Arg Tyr Thr Cys Tyr Leu Val Val His Asp Lys Leu  
35 40 45

Ser Thr Pro Pro Pro Leu Glu Glu Gly Glu Thr Leu Leu Ser Pro Val  
50 55 60

Val Glu Cys Gly Pro His Gly Ala Leu Phe Leu Arg Pro Val Ile Leu  
65 70 75 80

Glu Val Pro His Cys Ala Ser Leu Arg Pro Arg Asp Trp Glu Ile Val  
85 90 95

Leu Leu Arg Ser Glu Asn Gly Gly  
100